

Report on
Monona Grove High School
Traffic Impact Study

Draft

Prepared by:

STRAND ASSOCIATES, INC.
Excellence in Engineering Since 1946
910 West Wingra Drive
Madison, WI 53715

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Monona Grove High School

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ES.01 INTRODUCTION

The Monona Grove School District is proposing to build a new high school building at the current high school site located on Monona Drive. The school currently enrolls 750 students and the proposed project will increase their capacity by 250 students. With the construction of this building, several facility changes will also occur including additional parking, revised site access, a new swimming pool, and a new auditorium. Figure ES.01-1 shows the general study location. School construction will likely take two and one half years, with completion anticipated in the fall of 2000.

ES.02 PURPOSE OF THE REPORT

This study considers traffic operation and pedestrian accommodations with several site configurations. The

purpose of this report is to evaluate potential

benefits and drawbacks associated with each configuration and make a recommendation as to which configuration best meets the schools needs. The focus of the study evaluates the Lofty/Monona Drive intersection, the Cold Spring Avenue/Monona Drive intersection, and the proposed school site layout. Proposed alternative layouts include providing access to the site from either the Lofty Avenue/Monona Drive intersection, the Cold Spring Avenue/Monona Drive intersection, or both. Proposed alternative traffic control strategies include either continued stop sign control of Cold Spring Avenue and Lofty Avenue or a traffic signal at either of these locations.

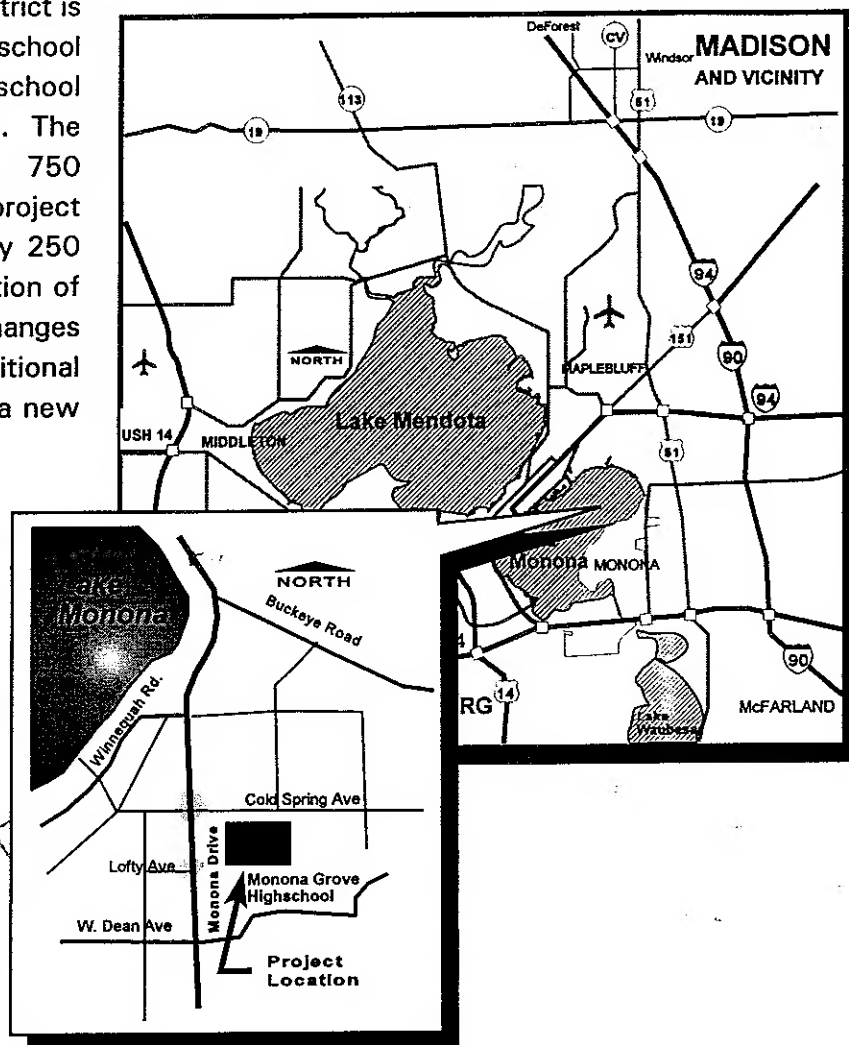


Figure ES.01-1 Project Location

ES.03 ANALYSIS

A. Motor vehicles

According to the Institute of Transportation Engineers Trip Generation Manual, the school itself generates 1,200 vehicles per day when school is in session. During the evening peak hour, less than 38 percent of school traffic uses the Cold Spring/Monona Drive intersection. At least 62 percent of the evening peak hour traffic from the school exits via Jerome Street to the north or via Cold Spring Avenue to the east.

This study analyzed intersection operational characteristics for weekday A.M. and P.M. peak hours. According to the analysis, left turns from Cold Spring Avenue and Lofty Avenue on to Monona Drive currently experience excessive delays during the A.M. and P.M. peak hours. These delays may exceed two minutes. Frustration caused by these long delays in some instances cause drivers to make turning maneuvers with traffic gaps that they would ordinarily find unacceptable.

The Manual on Uniform Traffic Control Devices publishes guideline criteria for determining the need for traffic signals. These criteria are called warrants and there are 14 different "warrants" that justify intersection signalization. Warrant analyses were performed for the Monona Drive/Cold Spring Avenue and Monona Drive/Lofty Avenue intersections. Evaluation of the Monona Drive/Cold Spring intersection indicates that this intersection currently meets warrant 4, School Crossings, and warrant 11, Peak Hour Volume. Evaluation of the Monona Drive/Lofty Avenue intersection indicates that this intersection currently meets warrant 4, School Crossings. If all access to the school is via the Lofty Avenue intersection, this intersection would also meet warrant 11, Peak Hour Volume.

It is likely that with better access to Monona Drive via a traffic signal, more traffic would use Monona Drive to access the school site. Currently at least 62 percent of traffic exiting the school in the pm peak hour avoids Monona Drive by using local streets such as Jerome Street and Cold Spring Avenue to the east. With the additional traffic attracted to Monona Drive due to the convenience of traffic signals, signal warrants would likely be exceeded to a greater degree than current traffic volumes indicate.

B. Pedestrians

The minimum recommended traffic gap for a pedestrian to cross Monona Drive is 15 seconds. To determine the number of crossing opportunities for pedestrians a gap study was performed. Between 3 P.M. and 4 P.M., there were 6 gaps of 15 or more seconds. Between 3:30 P.M. and 3:45 P.M., there was one gap of 15 or more seconds. The Monona Grove High School class day ends at 3:27 P.M., therefore, there was only one gap of adequate length during the

afternoon rush as students left school. Currently, many students cross Monona Drive while there are insufficient gaps. Observation of this peak pedestrian period found that as students crossed Monona Drive, much of the traffic on Monona Drive slowed and yielded to the pedestrians in the marked crosswalks. Therefore, while there may be only one gap of recommended length for pedestrians crossing during this peak period, pedestrians are creating more opportunities by forcing Monona Drive traffic to yield.

C. Crash History

For the three-year period from 1994 through 1996, there were eight reported crashes at the Monona Drive/Cold Spring Avenue intersection. Eight crashes within a three-year period is not unusual for an intersection carrying these traffic volumes and does not in itself warrant signalization. For the three-year period from 1994 through 1996, there were four reported crashes at the Monona Drive/Lofty Avenue intersection. Again, four crashes is not unusual for an intersection carrying these traffic volumes and does not in itself warrant signalization.

ES.04 RECOMMENDATIONS

The recommended option should address to the greatest extent the traffic and pedestrian operational objectives. These objectives are:

- Facilitate passenger car travel to and from the school site.
- Accommodate bus travel to, from, and within the site.
- Provide convenient and safe pedestrian routes to and from the site.

Locating all vehicular access onto Cold Spring Avenue and installing a traffic signal at the Cold Spring Avenue/Monona Avenue best addresses these objectives. Passenger car travel to and from the site will be convenient and predictable. Bus travel similarly benefits from the installation of a traffic signal on Monona Drive. Pedestrians are provided more substantial gaps at the Loftly Avenue intersection without the added potential for crashes from vehicular access to the school site at Loftly Avenue. Pedestrians are also provided a signalized intersection at which to cross Monona Drive if they so choose. Traffic on Monona Drive is delayed only slightly, and through appropriate signal timing, speeds between Dean Avenue and Cold Spring Avenue can be better controlled. Neighborhood residents will benefit from better access to Monona Drive due to the traffic signal, and less non neighborhood cut through traffic which previously used local streets to avoid delays at Monona Drive.

ES.05 IMPLEMENTATION

The county is planning to rebuild Monona Drive in approximately seven years. The most cost effective strategy for installing a traffic signal at Monona Drive and Cold Spring Avenue would be to coordinate signal installation with this construction work. In the interim, traffic patterns should remain similar to those today, with slightly greater delays due to the increased traffic to the site. With the additional parking and building amenities, there is greater justification for traffic signals once the new school is completed.

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SECTION 1
INTRODUCTION

1.01 PROJECT DESCRIPTION AND LOCATION

The Monona Grove School District is proposing to build a new high school building at the current high school site located on Monona Drive. The school currently enrolls 750 students and the proposed project will increase their capacity by 250 students. The project is located in the City of Monona at the intersection of Monona Drive and Cold Spring Avenue. With the construction of this building, several facility changes will also occur including additional parking, revised site access, a new swimming pool, and a new auditorium. Figure 1.01-1 shows the general study location. Approximately 227,000 square feet of floor area is anticipated for the new building. Land use surrounding the development locations consists of residential housing north and west of the school, and commercial development south and east of the school.

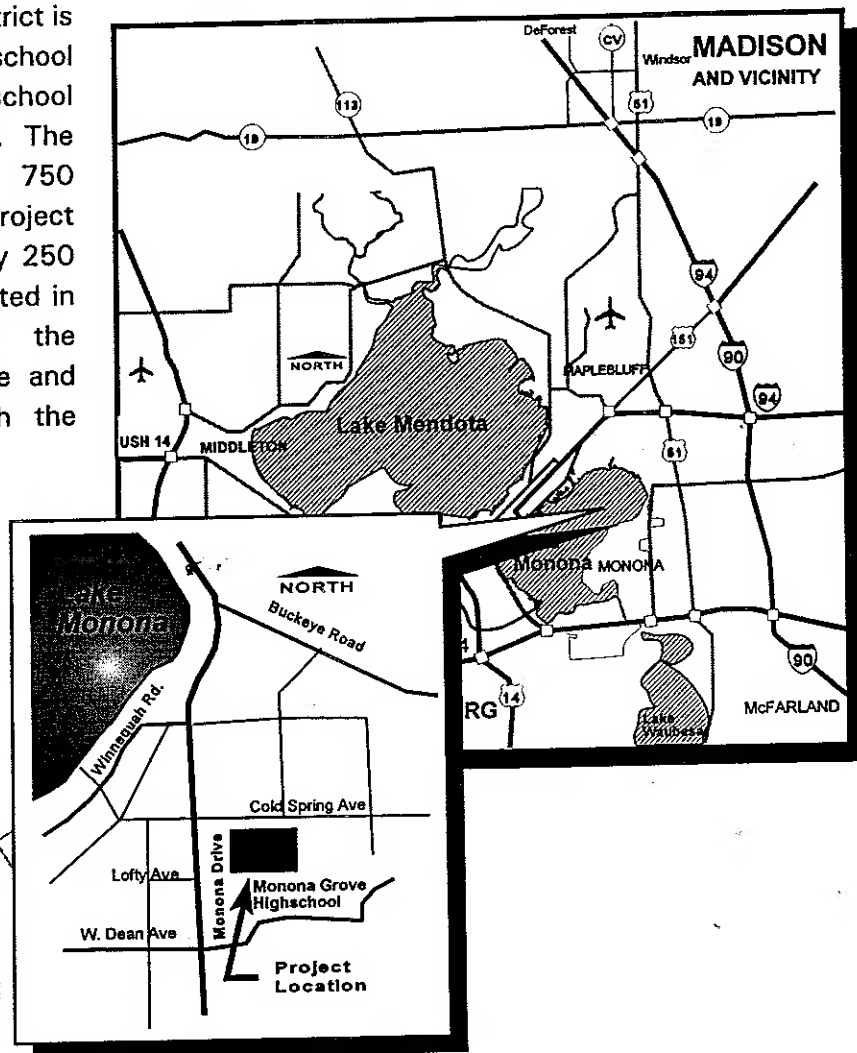


Figure 1.01-1 Project Location

Monona Drive will serve as the primary access for the school via Lofty Avenue and/or Cold Spring Avenue.

The school construction will likely take two and one half years, with completion anticipated in the fall of 2000. Figure 1.01-2 shows the existing site layout of the site, and existing access locations.

1.02 PURPOSE OF THE REPORT

This study will consider traffic operation and pedestrian accommodations with several site configurations. The purpose of this report is to evaluate potential benefits and drawbacks associated with each configuration and make a recommendation as to which configuration best meets the schools needs.

To perform this analysis, this study performed several activities, including:

- Inventorying the existing geometry, traffic volumes, and pedestrian volumes in and around the school.
- Determining the existing level of service for traffic and pedestrians at the intersections of Monona Drive/ Cold Spring Avenue, and Monona Drive/Lofty Avenue.
- Determining the future pedestrian and vehicular traffic and traffic needs in the vicinity of the school.
- Formulating alternatives to address the vehicular and pedestrian needs in the school vicinity.

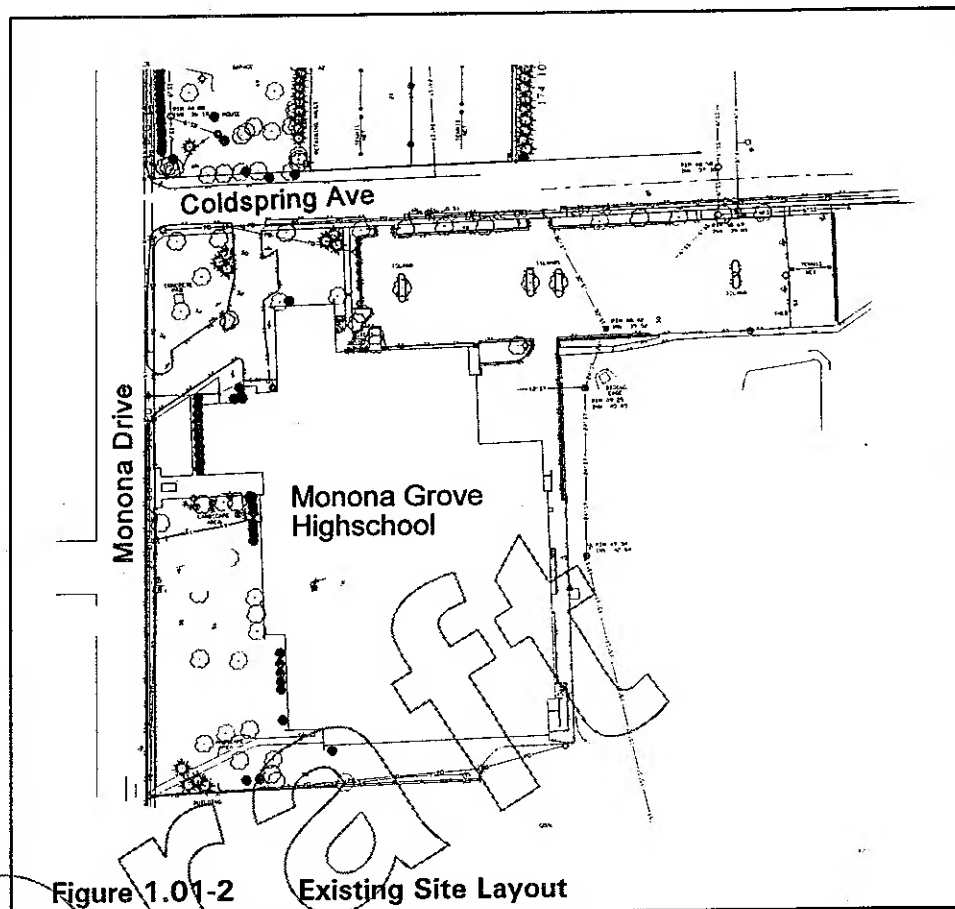


Figure 1.01-2 Existing Site Layout

- Evaluating the alternatives as to how they address the pedestrian and vehicular needs of the school.
- Evaluating current parking capacity and future parking needs.
- Selecting an alternative which best addresses the needs of Monona Grove High School.

The focus of the study evaluates the Lofty/Monona Drive intersection, the Cold Spring Avenue intersection, and the proposed school site layout.

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SECTION 2
EXISTING CONDITIONS

2.01 GEOMETRY AND LAYOUT

A. Roadways

Monona Drive serves as an arterial transporting road users from the Beltline to Atwood Avenue and other points in Madison. This four-lane undivided roadway incorporates 44 feet of traveling surface with 2.5-foot gutters. Average Daily Traffic (1996) on Monona Drive is 26,600 vehicles per day (vpd).¹ There are sidewalks on both sides of Monona Drive south of Cold Spring Avenue and on the west side north of Cold Spring Avenue. South of the Monona Grove High School, Monona Drive is commercially oriented with strip malls and service station-like establishments. In front of and north of the high-school, Monona Drive has residential housing lining its frontage.

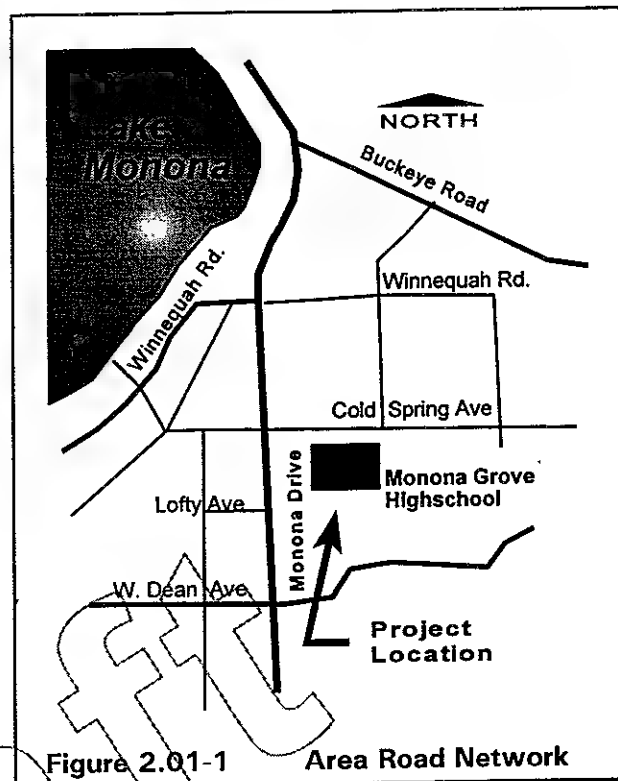


Figure 2.01-1 Area Road Network

Cold Spring Avenue is a two-lane undivided road which intersects with Monona Drive. Cold Spring Avenue is 34 feet wide west of Monona Drive and 39 feet wide east of Monona Drive. Adjacent land uses on Cold Spring Avenue are primarily residential. Average Daily Traffic on Cold Spring Avenue in the area investigated is about 1,100 vpd.² There is sidewalk on the south side of Cold Spring Avenue east of Monona Drive. Cold Spring Avenue is predominantly a residential street.

Lofty Avenue is a two-lane undivided road which intersects Monona Drive from the west. Lofty Avenue is 34 feet wide. Adjacent land uses on Lofty Avenue are primarily residential. Average Daily Traffic on Lofty Avenue in the area investigated is about 550 vpd.³ There are no sidewalks on Lofty Avenue. Lofty Avenue is predominantly a residential street.

¹ From WisDOT Wisconsin Highway Traffic Volume Data.

² Based on traffic counts taken 11/19/97-11/20/97.

³ Based on traffic counts taken 11/19/97-11/20/97.

are based on different assumptions which result in lower values. No-passing zones are based on the 85th percentile speed during low-volume conditions, which is slightly less than the design speed.

Sight distance adequate for passing should be provided frequently in design of two-lane highways, and each passing section should be as long as feasible. Although the frequency and lengths of such passing sections depend on physical and cost considerations and cannot be reduced to a standard, the importance of providing passing opportunities on as much of the length of a two-lane highway as possible cannot be overemphasized. The percentage of the highway where passing can take place affects not only capacity, but also the safety, comfort, and convenience of all highway users.

For purposes of design, passing sight distance for both horizontal and vertical restrictions is measured from a "seeing" height of 3.5 ft (1.05 m) to an object height of 4.25 ft (1.3 m). For purposes of marking pavement, it is measured from a "seeing" height of 3.75 ft (1.15 m) to an object height of 3.75 ft (1.15 m).

Intersection sight distance. Intersections should be planned and located to provide as much sight distance as possible. In achieving a safe highway design, as a minimum, there should be sufficient sight distance for the driver on the minor highway to cross the major highway without requiring approaching traffic to reduce speed. Minimums for different design speeds are shown in Table 19-8. Stop con-

Thier report claims 345' SD with 40 mph approach speed
 ⇒ should yield design spd. of 34.5 mph
 Not 27 mph as their report states

TABLE 19-8
Suggested Corner Sight Distance at Intersections*

Design speed mph (km/h)				
20 (32)	30 (48)	40 (64)	50 (80)	60 (97)
Minimum corner intersection sight distance* ft (m)				
200 (61)	300 (91)	400 (122)	500 (152)	600 (183)

*Corner sight distance measured from a point of the minor road at least 15 ft (4.6 m) from the edge of the major road pavement and measured from a height of eye of 3.5 ft (1.05 m) on the minor road to a height of object of 4.25 ft (1.3 m) on the major road.

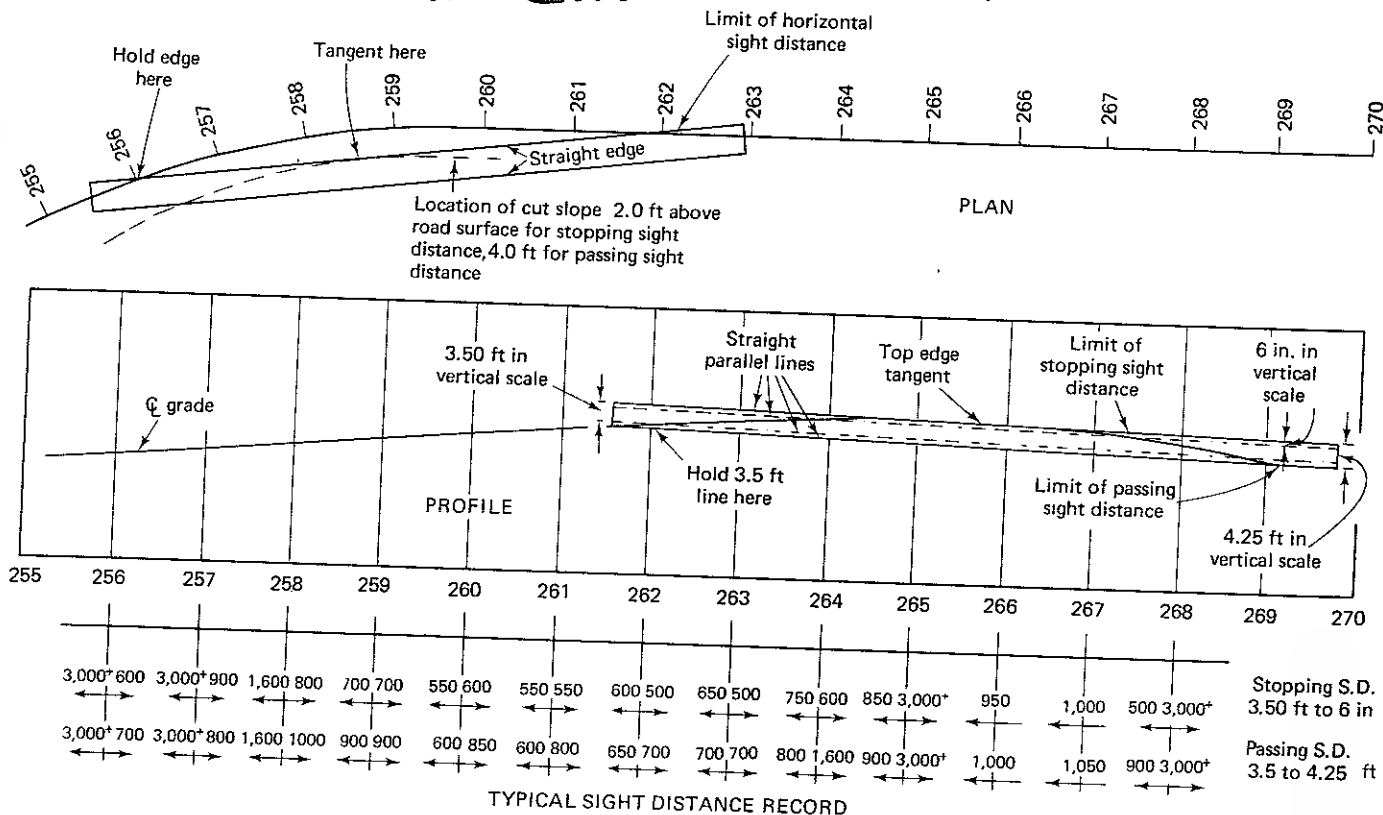
trols are assumed; other forms of traffic control have different intersection sight distance requirements.

Procedures for checking plans. It is often desirable during the preliminary design stage to determine graphically the sight distances and record them at frequent intervals. Methods for scaling sight distances and a typical sight distance record which should be shown on final plans are shown in Figure 19.2. For two-lane highways, passing sight distance, in addition to stopping sight distance, should be shown.

Horizontal sight distance on the inside of curves may be limited by obstructions such as buildings, plant growth, or cut slope. Horizontal sight distance is measured along a straight edge, as indicated in the upper left in Figure 19.2.

Figure 19.2. Scaling and recording sight distances on plans. (Metric conversion factor: multiply values by 0.305 m/ft.) SOURCE: Adapted from *A Policy on Geometric Design of Rural Highways*, Washington, D.C.: American Association of State Highway Officials, 1965, p. 150.

not always practical in urban environments.



B. Intersections

The most northerly intersection in the study area is the Monona Drive/Cold Spring Avenue intersection. Monona Drive runs north south while Cold Spring Avenue runs east west. The Monona Drive/Cold Spring Avenue intersection is unsignalized with north-south Monona Drive traffic having through right-of-way and Cold Spring Avenue having stop control. Sight distance at this intersection to the north is more than adequate; however, sight distance to the south is only 345 feet. This sight distance corresponds to a safe traveling speed of 27 mph for northbound Monona Drive vehicles. The posted speed limit for northbound Monona Drive vehicles, however, is 40 mph. Therefore, northbound Monona Drive vehicles must slow down for westbound Cold Spring vehicles turning right or eastbound Cold Spring vehicles turning left onto Monona Drive. Although this intersection sight distance is less than desirable, a review of the intersection's crash history from 1994 to 1996 does not show a crash associated with sight distance. Therefore, the crash history suggests that this less than desirable sight distance does not pose a significant safety problem.

The intersection of Monona Drive with Lofty Avenue is located directly south of Cold Spring Avenue. This intersection is also unsignalized with Lofty Avenue having stop control and Monona Drive having the through right-of-way. At present, this intersection is three way, with Lofty Avenue ending at Monona Drive. As part of the proposed school access plan, the existing school driveway located between Lofty Avenue and Cold Spring Avenue may be relocated to the east side of this intersection. Sight distance at this intersection is greater than 1,000 feet in both directions, which is more than adequate for the speeds on Monona Drive.

The Monona Drive/West Dean Avenue intersection is a signalized intersection 900 feet south of Monona Grove High School. This intersection is not technically within the study area. Signal timing associated with this intersection, however, influences vehicular and pedestrian traffic entering and exiting the high school. Therefore, this intersection is considered in some portions of the report.

C. Site

The existing school layout has four access points (driveways). One driveway lies on Monona Drive between Cold Spring Ave and Lofty Avenue and forms a "U" with a driveway on Cold Spring Avenue. This driveway combination is used primarily for drop-off traffic and buses. The third and fourth driveways are also located on Cold Spring Avenue and serve as the entrance to majority of the school's parking. This driveway is used both for drop-off traffic and for vehicles using the school's 182 parking spaces.

D. Pedestrian Accommodations

Monona Drive has sidewalks on both sides of Monona Drive south of Cold Spring Avenue and on the west side of Monona Drive north of Cold Spring Avenue. Additionally, there is sidewalk on the south side of Cold Spring Avenue to the east of Monona Drive. Special "zebra" stripe crosswalks crossing Monona Drive are located at Cold Spring Avenue, Lofty Avenue, and between Lofty Avenue and Dean Avenue. At the Dean Avenue signal there are pedestrian signal heads and push buttons.

2.02 TRAFFIC VOLUMES

A. Motor vehicles

Currently traffic volumes on Monona Drive range from 25,400 to 38,700 vehicles per day. Traffic volumes on Cold Spring Ave are 1,100 vehicles per day and volumes on Lofty Avenue are 550 vehicles per day⁴. According to the Institute of Transportation Engineers Trip Generation Manual, the school itself generates 1,200 vehicles per day when school is in session. During the evening peak hour, less than 38 percent of school traffic uses the Cold Spring/Monona Drive intersection. At least 62 percent of the evening peak hour traffic from the school exits via Jerome Street to the north or via Cold Spring Avenue to the east. Parking for the school facility is accommodated by the 182 parking spaces on the site and along adjacent side streets. Approximately 50 vehicles a day park on side streets adjacent to the site when school is in session.

For this study, turning volumes were also recorded for the Cold Spring Avenue/Monona Drive intersection and the Lofty Avenue/Monona Drive intersection. The predominant turning movements at the Cold Spring Avenue/Monona Drive intersection are north bound right turns and west bound left turns. Even with modest volumes, traffic queues of eight or more vehicles waiting to turn onto Monona Drive are common on Cold Spring Avenue. Turning movements at the Lofty Avenue/Monona Drive intersection are minor, with no more than 10 vehicles per hour making any one turning movement. This indicates that much of the traffic at these intersections is oriented towards the south, and that many drivers chose to avoid Monona Drive by using Cold Spring Avenue to the east and Jerome Street to the north.

No counts were taken during special events such as concerts, football and basketball games. It is estimated that these types of events can generate from 500 to 750 trips, depending on

⁴ Mainline traffic volumes were obtained from both WisDOT and counts taken on November 19 and 20, 1997. Traffic turning counts were also recorded on November 19 from 7 to 9 A.M. and 2 to 6 P.M. and December 16 and 17 from 7:15 to 8:15 A.M. and 3:15 to 4:15 P.M. at 15-minute intervals.

how large an audience attends. For larger events, traffic control on Monona Drive is managed by a police officer.

B. Pedestrian/Bicyclist

From counts taken in November and December 1997, approximately 70 pedestrian cross Monona Drive in the vicinity of the school in the morning and afternoon. The majority of these pedestrians are students whose origin and destination is their cars parked in the neighborhood west of the school. There are no official bicycle counts for the study area; however, it is estimated that between 5 and 10 students ride their bicycles to school during favorable weather.

2.03 SERVICE LEVELS

A. Motor Vehicles

The operation of a roadway (e.g., congestion levels) is typically described as "Level of Service" (LOS). The LOS rating system describes the traffic flow conditions of a roadway or intersection and ranges from A (free-flow conditions) to F (over capacity).

For intersections, LOS is determined by the average delay (in seconds) of all vehicles entering the intersection. The average delay is based on the peak 15-minute period of the peak hour being analyzed. Since this delay is an average value, some vehicles will experience substantially greater delay, and some will experience less delay than the average value. Intersections with short average delays have high Levels of Service; conversely, intersections with long average delays have low Levels of Service. LOS E is considered to be the limit of acceptable delay. A LOS of F for the total intersection is considered to be an indication of the need for improvement.

LOS characteristics are different for signalized and unsignalized intersections. The primary reason for this is that drivers anticipate longer delays at signalized intersections which carry large amounts of traffic. However, drivers generally feel unsignalized intersections should have less delay. Additionally, several driver-behavior considerations combine to make delays at unsignalized intersections less desirable than at signalized intersections. For example, drivers at unsignalized intersections are able to relax during the red interval, whereas drivers on the minor approaches to unsignalized intersections must remain attentive in order to identify acceptable gaps for entry. Typically, LOS is only calculated for the legs of an unsignalized intersection that have stop control. The following table describes Level of Service characteristics for both signalized and unsignalized intersections.

LOS	Signalized Intersections	Unsignalized Intersections
A	Describes intersections with very low levels of delay that average less than 5 seconds per vehicle. This condition occurs with extremely favorable signal progression and most vehicles arrive on the green phase of the signal.	Describes intersections with very low levels of delay that average less than 5 seconds per vehicle.
B	Describes intersections with low levels of delay that are more than 5 seconds yet less than 15 seconds per vehicle. This condition generally occurs with short cycle lengths and/or good signal progression.	Describes intersections with low levels of delay that are more than 5 seconds yet less than 10 seconds per vehicle.
C	Describes intersections with average delays ranging from 15 to 25 seconds per vehicle. Individual cycle failures (waiting through more than one cycle) may appear at this Level of Service. The number of vehicles stopping is also substantial at this Level of Service.	Describes intersections with average delays ranging from 10 to 20 seconds per vehicle.
D	Describes intersections with average delays ranging from 25 to 40 seconds per vehicle. The influence of congestion becomes more noticeable. This Level of Service may result from long cycle lengths, unfavorable progression and/or high vehicle to capacity ratios. Many vehicles stop and the proportion of non-stopping vehicles declines. Individual cycle failures are noticeable.	Describes intersections with average delays ranging from 20 to 30 seconds per vehicle. The influence of congestion becomes more noticeable.
E	Describes intersections with average delays ranging from 40 to 60 seconds per vehicle. Individual cycle failures are frequent occurrences. This level of service is considered by most agencies to be the limit of acceptable delay.	Describes intersections with average delays ranging from 30 to 45 seconds per vehicle.
F	Describes intersections with average delays that are more than 60 seconds per vehicle. This level of service, considered to be unacceptable by most drivers, often occurs with over saturation. The number of vehicles entering the intersection exceeds the intersection's capacity.	Describes intersections with average delays that are more than 45 seconds per vehicle. LOS F exists where there are insufficient gaps of suitable size to allow a side street demand to cross safely though a major street traffic stream. This LOS is usually evident from extremely long total delays experienced by side street traffic and queuing on the minor approaches.

Source: 1994 Highway Capacity Manual

Table 2.03-1 Operational Characteristics Associated with LOS Ratings

Most roadways typically have two peak-hour periods, one being the morning rush hour and the other being the evening rush hour. This study analyzed intersection operational characteristics for weekday A.M. and P.M. peak hours. Operation was analyzed using Highway Capacity Manual Software for the unsignalized intersections and Signal 94 (possible future) for signalized intersections. The Highway Capacity Manual Software calculates the LOS for yielding movements at stop-controlled intersections. Signal 94 uses the Highway Capacity Manual methods for determining operation levels at signalized intersections. Signal 94 also has the ability to optimize signal phasing and timing.

According to the analysis, left turns from Cold Spring Avenue and Lofty Avenue on to Monona Drive currently operate at LOS F during the A.M. and P.M. peak hours. The analyses also indicate that delays for these left-turning vehicles can be extremely long, in some instances exceeding two minutes. Frustration caused by these long delays in some instances cause drivers to make turning maneuvers with traffic gaps that they would ordinarily find unacceptable.

The Manual on Uniform Traffic Control Devices publishes guideline criteria for determining the need for traffic signals. These criteria are called warrants and there are 14 different "warrants" that justify intersection signalization. These warrants, although giving justification for a traffic signal, do not require that a traffic signal be installed. Warrant analyses were performed for the Monona Drive/Cold Spring Avenue and Monona Drive/Lofty Avenue intersections. Evaluation of the Monona Drive/Cold Spring intersection indicates that this intersection currently meets warrant 4, School Crossings, and warrant 11, Peak Hour Volume. Evaluation of the Monona Drive/Lofty Avenue intersection indicates that this intersection currently meets warrant 4, School Crossings. It is likely that with better access to Monona Drive via a traffic signal, more traffic would use this access. Currently at least 62 percent of traffic exiting the school in the pm peak hour avoid Monona Drive by using local streets such as Jerome St. and Cold Spring Avenue to the east. With the additional traffic attracted to Monona Drive due to the convenience of a traffic signals, signal warrants would be met or exceeded to a greater degree than current traffic volumes indicate.

B. Pedestrians

The minimum recommended traffic gap for a pedestrian to cross Monona Drive is 15 seconds. To determine the number of crossing opportunities for pedestrians a gap study was performed. Between 3 P.M. and 4 P.M., there were 6 gaps of 15 or more seconds. Between 3:30 P.M. and 3:45 P.M., there was one gap of 15 or more seconds. The Monona Grove High School class day ends at 3:27 P.M., therefore, there was only one gap of adequate length during the afternoon rush as students left school. Currently, many students cross Monona Drive while there are insufficient gaps. Observation of this peak pedestrian period found that as students crossed Monona Drive, much of the traffic on Monona Drive slowed and yielded to the

pedestrians in the marked crosswalks. Therefore, while there may be only one gap sufficient for pedestrian crossing during this peak period, pedestrians are creating more opportunities by forcing Monona Drive traffic to yield.

2.04 CRASH HISTORY

A. Monona Drive and Cold Spring Avenue

For the three-year period from 1994 through 1996, there were eight reported crashes at the Monona Drive/Cold Spring Avenue intersection. Five of these crashes involved Cold Spring vehicles turning left onto or crossing Monona Drive. One of these crashes involved a rear-end crash on Monona Drive, one crash involved a Monona Drive vehicle turning left onto Cold Spring Drive, and the other crash involved a crash with a parked car on Monona Drive. Eight crashes within a three-year period is not unusual for an intersection carrying these traffic volumes and does not in itself warrant signalization.

B. Monona Drive and Lofty Avenue

For the three-year period from 1994 through 1996, there were four reported crashes at the Monona Drive/Lofty Avenue intersection; two were rear-end crashes on Monona Drive, one involved a pedestrian, and one involved a parked car. Again, four crashes is not unusual for an intersection carrying these traffic volumes and does not in itself warrant signalization.

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SECTION 3
TRAFFIC IMPACT ANALYSIS

3.01 PROJECTED TRIPS WITH REVISED SCHOOL ROAD NETWORK

Currently the Monona Grove High School enrolls 750 students, which generates approximately 1,200 trips. With the proposed project, the school's capacity will be increased by 250 students, which will increase the number of trips generated by the school by 400. About 50 school-related vehicles also park on adjacent side streets. With the increased on-site parking that will be provided by the project, these vehicles will now enter and exit the high school facility, increasing trips entering and exiting the facility. This shift in parking location may also decrease the number of pedestrians who cross Monona Drive to get to their parked vehicles.

Additionally, the proposed school internal road network may change traffic patterns near the school. Depending on the site layout selected, vehicles may enter and exit on Cold Spring Avenue only, or on a combination of Monona Drive and Cold Spring. The internal layout will affect traffic distribution to the Cold Spring Road and Lofty Avenue intersections, which will in turn affect the traffic operation of these intersections. The traffic distribution associated with the various alternatives is discussed more fully in Section 4 of this report.

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SECTION 4
ALTERNATIVES

4.0 ALTERNATIVES

Alternatives for the site must address passenger car, bus, and pedestrian traffic, and access. Therefore, each alternative should:

- Facilitate passenger car travel to and from the school site.
- Accommodate bus travel to, from, and within the site.
- Provide convenient and safe pedestrian routes to and from the site.

To address these objectives, three main alternatives (each with two or three sub-alternatives) were formulated. Each alternative uses different access configurations, site layout configuration, and/or signalization scenarios to accomplish the above stated objectives. The following paragraphs summarize the characteristics of each alternative.

4.01 ALTERNATIVE A

A. Alternative A1

Alternative A1 arranges the school layout so that the only school entrance and exit is a driveway at the Lofty Avenue intersection. Passenger vehicles and buses will use this driveway to enter and exit the site, to drop off students, and to use the school site's parking. All driveways on Cold Spring Avenue would be eliminated as well as the existing school entrance on Monona Drive. Pedestrian crosswalks would remain at Cold

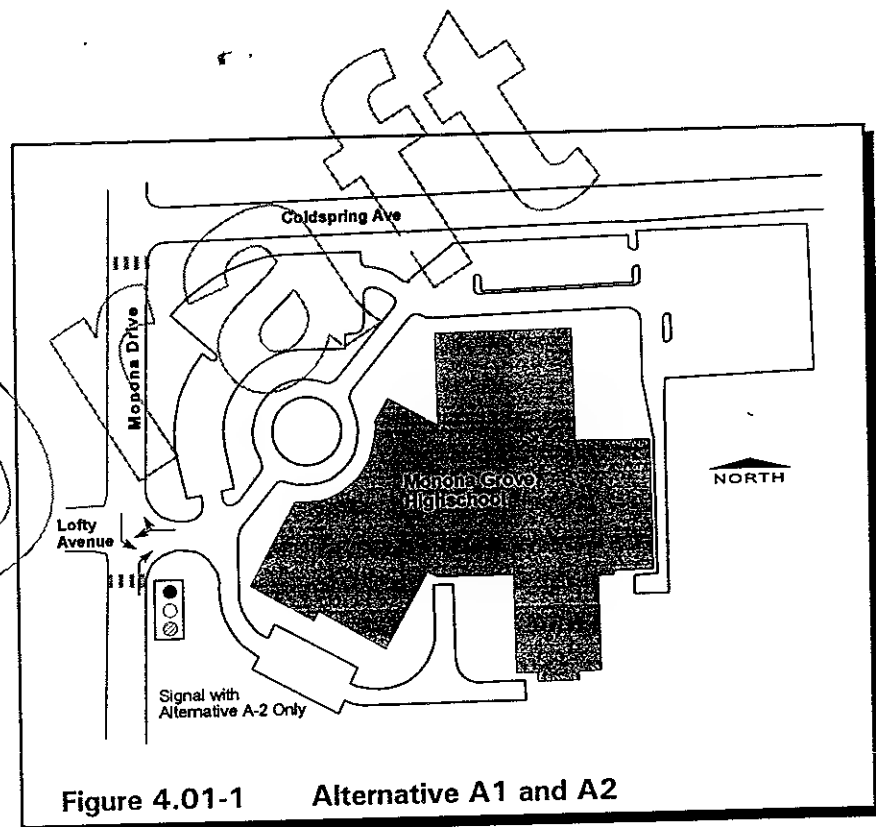


Figure 4.01-1 Alternative A1 and A2

Spring Avenue and Lofty Avenue. Sidewalks within the school site will direct pedestrians to the crossing at this intersection. This will focus all of the site traffic to this intersection.

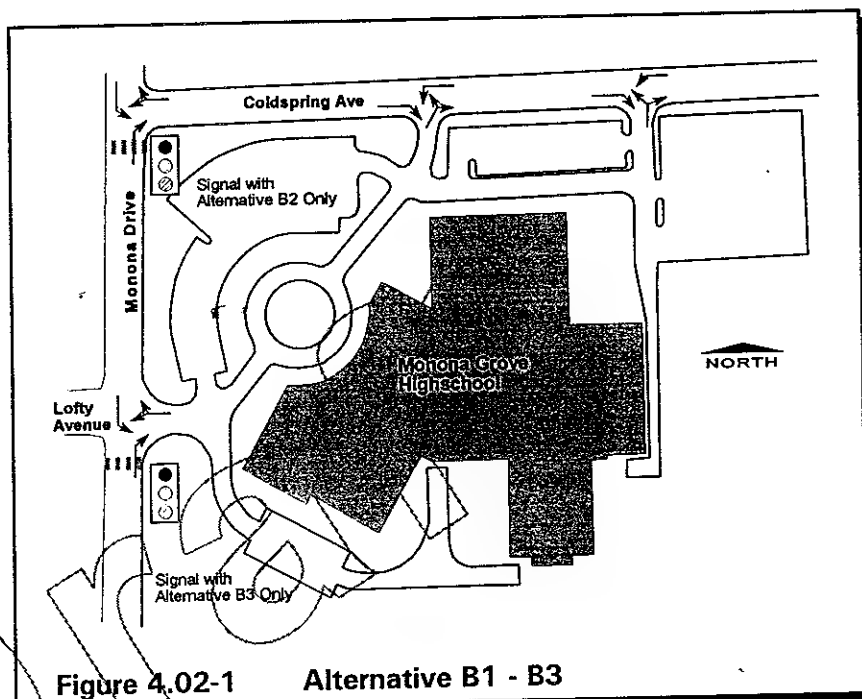
B. Alternative A2

Alternative A2 is identical to Alternative A1 with the exception that Lofty Avenue is signalized. The access driveways along Cold Spring Avenue are eliminated. This will focus all of the site traffic to the Lofty Avenue intersection. All traffic will enter and exit the site at Lofty Avenue. Stop signs will remain at Cold Spring Avenue. Crosswalks will remain at their current locations at Lofty Avenue and Cold Spring Avenue.

4.02 ALTERNATIVE B

A. Alternative B1

Alternative B1 provides access to the site at both Lofty Avenue and Cold Spring Avenue. The driveway at Lofty Avenue and Monona Drive would serve only as an entrance, primarily for passenger cars. There would be two driveways onto Cold Spring Avenue. These driveways would serve as entrances and exits for both passenger cars and buses. Stop signs will remain at Cold Spring Avenue and Lofty Avenue.



The Cold Spring Avenue intersection will serve as the focus for vehicles exiting the school site. Crosswalks will remain at their current locations at Lofty Avenue and Cold Spring Avenue and internal sidewalks will focus pedestrian traffic to the Lofty Avenue intersection.

B. Alternative B2

Alternative B2 is identical to Alternative B1 with the exception that Cold Spring Avenue is signalized. Due to this signalization, it is expected that more traffic will choose to use the Cold Spring Avenue driveways to enter and exit the school site. The signal at Cold Spring Avenue will be coordinated with the signal at West Dean Avenue to provide gaps in Monona Drive's traffic stream. These gaps will provide more opportunities for pedestrians to conveniently cross Monona Drive. Crosswalks will remain at their current locations at Lofty Avenue and Cold Spring Avenue and the internal sidewalks would continue to encourage pedestrian crossings at the Lofty Avenue intersection. The signalized Cold Spring intersection, however,

would also have pedestrian signals and crosswalks for students choosing to use this intersection.

C. Alternative B3

Alternative B3 is similar to Alternative B2 in that it provides access to the site at both Lofty Avenue and Cold Spring Avenue. Alternative B3 differs from Alternative B2 mainly in that a signal will be located at Lofty Avenue rather than Cold Spring Avenue. The driveway on Monona Drive would coincide with Lofty Avenue and would be used for both entering and exiting the site. Site traffic will be divided between Lofty Avenue and Cold Spring Avenue, although with the signal at Lofty Avenue it is expected that more traffic will choose to use this intersection. Stop signs will remain at Cold Spring Avenue. Crosswalks will remain at their current locations at Lofty Avenue and Cold Spring Avenue. Non site-related traffic may drive through the school site to gain access to the signal at Lofty Avenue.

4.03 ALTERNATIVE C

A. Alternative C1

Alternative C1 provides general access to the site exclusively at Cold Spring Avenue. Access directly onto Monona Drive via Lofty Avenue is eliminated. This will focus nearly all of the site traffic to the Monona Drive/Cold Spring Avenue intersection. A driveway access will be located on Monona Drive south of Lofty Avenue for truck and staff use only. The stop signs at Lofty Avenue and Cold Spring Avenue will remain. Crosswalks will remain at their current locations at Cold Spring Avenue and Lofty Avenue.

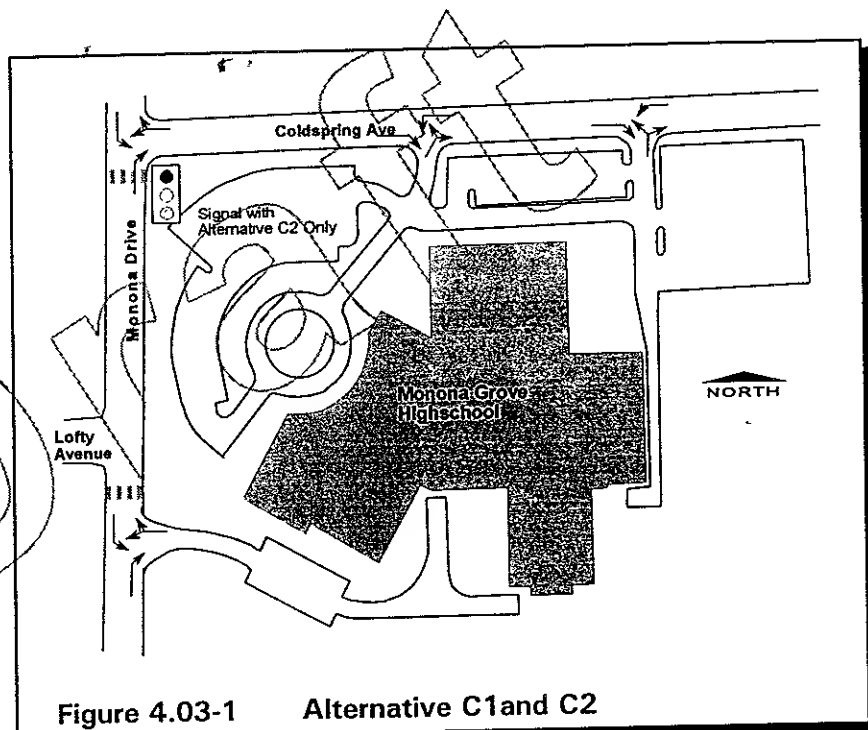


Figure 4.03-1 Alternative C1 and C2

B. Alternative C2

Alternative C2 is identical to Alternative C1 with the exception that Cold Spring Avenue is signalized. Access directly onto Monona Drive via Lofty Avenue is eliminated. This will focus

nearly all of the site traffic to the Monona Drive/Cold Spring Avenue intersection. A driveway access will be located on Monona Drive south of Lofty Avenue for truck and staff use only. The stop sign at Lofty Avenue will remain. The signal at Cold Spring Avenue will be coordinated with the signal at West Dean Avenue to provide gaps in Monona Drive's traffic stream. These gaps will provide more opportunities for pedestrians to conveniently cross Monona Drive. Crosswalks will remain at their current locations at Cold Spring Avenue and Lofty Avenue.

Draft

Draft

SECTION 5
ALTERNATIVE ANALYSIS

5.01 ALTERNATIVE A

A. Alternative A1

With Alternative A1, access from the site will be extremely difficult for traffic turning left onto Monona Drive. All of the school site traffic will be forced to use this intersection, yet the projected level of service for left turns exiting the site is F with delays exceeding three minutes. With the exception of some yielding for vehicles turning into the school, traffic on Monona Drive will be relatively unimpeded by this alternative. Due to the proximity of the school building to the intersection, traffic circulation on school grounds may be difficult near the Lofty Avenue intersection. Here traffic queues will tend to block parking aisles creating congestion. Local traffic patterns to and from the school will also change as all vehicles will need to use Monona Drive rather than Cold Spring Avenue to access the site. Traffic gaps for pedestrians crossing Monona Drive will not be frequent, therefore crossing difficulty will remain the same. Also, since all school traffic is focused at the Lofty Avenue intersection, there is a greater potential for vehicle-pedestrian conflicts at this intersection.

B. Alternative A2

With a signal at Lofty Avenue, exiting the school site will be much easier with a projected level of service of B to C and average delays of from 13 to 18 seconds. There will be some delay to vehicles traveling on Monona Drive because two way progression along Monona Drive will not be as effective. Calculated values of delay for through traffic in the peak am and pm hours is between 4 and 8 seconds per vehicle. Due to the proximity of the school building to the intersection, traffic circulation on school grounds may be difficult near the Lofty Avenue intersection. Here traffic queues will tend to block parking aisles creating congestion. Local traffic patterns to and from the school will also change as all vehicles will need to use Monona Drive rather than Cold Spring Avenue to access the site. The signal will create substantially more gaps for pedestrians crossing Monona Drive. There may be some potential conflicts between left turning vehicles and pedestrians at the Lofty Avenue crosswalk during the crossing phase of the signal cycle. Some pedestrians may also chose to ignore the signal control, also increasing the potential for pedestrian-vehicle conflicts.

5.02 ALTERNATIVE B

A. Alternative B1

This option is the most similar to the existing operations. Traffic exiting the site and turning left onto Monona Drive will continue to experience a level of service F with average delays exceeding 5 minutes. With the exception of some yielding for vehicles turning into the school, traffic on Monona Drive will be relatively unimpeded by this alternative. Due to the proximity of the school building to the intersection, traffic circulation on school grounds may be difficult near the Lofty Avenue intersection. By providing Cold Spring Avenue as another option for

A.0 Traffic Data

Traffic data was obtained from WisDOT Wisconsin Highway Traffic Volume Data, March 1997, and counts taken in November and December, 1997.

Two way daily traffic volume on Cold Spring Avenue east of the Monona Grove High School driveway was 1073 vehicles and two way daily traffic volume on Jerome Street north of Cold Spring Avenue was 455 vehicles.

Draft

24/97
31:34

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Page: 1

*** Single Channel 15 Minute ***

File ID : 3
Info 1 :
Info 2 :

Date : Nov 19, 1997 Wed
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour	1-SB, Monona	approa	Hour	Graph	
Starts	0	15	30	45	Total

1000

1M						
2						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
PM						
12						
1						
2				132	132	*****
3	192	154	214	215	775	*****
4	212	239	233	227	911	*****
5	252	210	179	149	790	*****
6	161	164	117	113	555	*****
7	102	73	88	83	346	*****
8	69	75	66	84	294	*****
9	71	53	78	49	251	*****
10	36	33	19	20	108	*****
11	25	19	11	6	61	***

FALS		4223
AVERAGE	114.1 period	456.5

Peak PM Hour is *** 4:15pm to 5:15pm ***
Volume Lane 1 : 951
Peak Hour Factor : 0.943
Peak / Day Total : 0.225

24/97
31:34

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*** Single Channel 15 Minute ***

File ID : 3
Info 1 :
Info 2 :

Date : Nov 20, 1997 Thu
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour	1-SB, Monona approach				Hour	Graph	1000
starts	0	15	30	45	Total	0	
AM							
12	6	4	5	6	21	*	
1	6	6	5	4	21	*	
2	7	3	1	3	14	*	
3	2	3	5	4	14	*	
4	3	7	7	7	24	**	
5	5	16	14	34	69	***	
6	38	42	90	100	270	*****	
7	108	175	261	220	764	*****	
8	140	145	133	97	515	*****	
9	104	111	124	100	439	*****	
10	86	122	122	138	468	*****	
11	126	158	144	131	559	*****	
PM							
12	140	150	161	158	609	*****	
1	150	162	132	134	578	*****	
2	150	150	143		443	*****	
3							
4							
5							
6							
7							
8							
9							
10							
11							

TOTALS 4808
AVERAGE 81.5 period 326.0

Peak AM Hour is *** 7:15am to 8:15am ***
Volume Lane 1 : 796
Peak Hour Factor : 0.762
Peak / Day Total : 0.166

Peak PM Hour is *** 12:30pm to 1:30pm ***
Volume Lane 1 : 631
Peak Hour Factor : 0.974
Peak / Day Total : 0.131

12/24/97
13:31:34

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***** Single Channel 15 Minute Final Report (page 1 of 2) *****

te ID : 3
info 1 :
Info 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS COMBINED

our	1-SB, Monona	approa	Hour	Graph	
starts	0	15	30	45	Total
AM					
12	6	4	5	6	21
1	6	6	5	4	21
2	7	3	1	3	14
3	2	3	5	4	14
4	3	7	7	7	24
5	5	16	14	34	69
6	38	42	90	100	270
7	108	175	261	220	764
8	140	145	133	97	515
9	104	111	124	100	439
10	86	122	122	138	468
11	126	158	144	131	559
PM					
12	140	150	161	158	609
1	150	162	132	134	578
2	150	150	143	132	575
3	192	154	214	215	775
4	212	239	233	227	911
5	252	210	179	149	790
6	161	164	117	113	555
7	102	73	88	83	346
8	69	75	66	84	294
9	71	53	78	49	251
10	36	33	19	20	108
11	25	19	11	6	61

TOTALS 9031
AVERAGE 94.1 period 376.3

Peak AM Hour is *** 7:15am to 8:15am ***

Volume Lane 1 : 796
Peak Hour Factor : 0.762
Peak / Day Total : 0.088

Peak PM Hour is *** 4:15pm to 5:15pm ***

Volume Lane 1 : 951
Peak Hour Factor : 0.943
Peak / Day Total : 0.105

124/97
131:34

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***** Single Channel 15 Minute Final Report (page 2 of 2) *****

File ID : 3
Info 1 :
Info 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS AVERAGED

Hour Starts	1-SB, Monona	approa	Hour	Graph	1000
0	15	30	45	Total	0
AM					
12	6	4	5	6	21
1	6	6	5	4	21
2	7	3	1	3	14
3	2	3	5	4	14
4	3	7	7	7	24
5	5	16	14	34	69
6	38	42	90	100	270
7	108	175	261	220	764
8	140	145	133	97	515
9	104	111	124	100	439
10	86	122	122	138	468
11	126	158	144	131	559
PM					
12	140	150	161	158	609
1	150	162	132	134	578
2	150	150	143	132	575
3	192	154	214	215	775
4	212	239	233	227	911
5	252	210	179	149	790
6	161	164	117	113	555
7	102	73	88	83	346
8	69	75	66	84	294
9	71	53	78	49	251
10	36	33	19	20	108
11	25	19	11	6	61

TOTALS 9031
AVERAGE 94.1 period 376.3

Peak AM Hour is *** 7:15am to 8:15am ***
Volume Lane 1 : 796
Peak Hour Factor : 0.762
Peak / Day Total : 0.088

Peak PM Hour is *** 4:15pm to 5:15pm ***
Volume Lane 1 : 951
Peak Hour Factor : 0.943
Peak / Day Total : 0.105

24/97
40:24

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*** Single Channel 15 Minute ***

File ID : 4
Info 1 :
Info 2 :

Date : Nov 19, 1997 Wed
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour	1-NB, Monona	approa	Hour	Graph	
Starts	0	15	30	45	Total

1M						
2						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12PM						
1						
2			128	149	277	*****
3	209	243	218	228	898	*****
4	255	288	276	303	1122	*****
5	305	271	209	193	978	*****
6	163	176	140	103	582	*****
7	129	102	86	98	415	*****
8	81	75	74	58	288	*****
9	79	50	50	44	223	*****
10	26	31	24	27	108	****
11	12	19	10	15	56	***

FALS 4947
VERAGE 130.2 period 520.7

Peak PM Hour is *** 4:15pm to 5:15pm ***
Volume Lane 1 : 1172
Peak Hour Factor : 0.961
Peak / Day Total : 0.237

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*** Single Channel 15 Minute ***

Date : Nov 20, 1997 Thu
 Factor : 1.00

te ID : 4
 info 1 :
 Info 2 :

Lane 1-Normal, Axle, /2

our starts	1-NB, Monona approa				Hour Total	Graph 0	1200
	0	15	30	45			
AM							
12	5	7	5	8	25	*	
1	6	3	5	3	17	*	
2	8	7	3	7	25	*	
3	6	5	8	8	27	*	
4	13	12	25	37	87	****	
5	48	74	132	118	372	*****	
6	197	243	296	192	928	*****	
7	122	117	118	132	489	*****	
8	122	135	121	120	498	*****	
9	161	136	164	169	630	*****	
10	188	193	154	176	711	*****	
11	221	246	193	160	820	*****	
PM							
12	165	180	203	236	784	*****	
1	207	209			416	*****	
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
TOTALS					5829		
AVERAGE		107.9	period		431.8		

Peak AM Hour is *** 6:00am to 7:00am ***

Volume Lane 1 : 928
 Peak Hour Factor : 0.784
 Peak / Day Total : 0.159

Peak PM Hour is *** 12:30pm to 1:30pm ***

Volume Lane 1 : 855
 Peak Hour Factor : 0.906
 Peak / Day Total : 0.147

1/24/97
14:40:24

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Site ID : 4
Info 1 :
Info 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS COMBINED

Hour Starts	1-NB, Monona	approa	Hour	Graph	1200
0	15	30	45	Total	0
AM					
12	5	7	5	8	25
1	6	3	5	3	17
2	8	7	3	7	25
3	6	5	8	8	27
4	13	12	25	37	87
5	48	74	132	118	372
6	197	243	296	192	928
7	122	117	118	132	489
8	122	135	121	120	498
9	161	136	164	169	630
10	188	193	154	176	711
11	221	246	193	160	820
PM					
12	165	180	203	236	784
1	207	209			416
2			128	149	277
3	209	243	218	228	898
4	255	288	276	303	1122
5	305	271	209	193	978
6	163	176	140	103	582
7	129	102	86	98	415
8	81	75	74	58	288
9	79	50	50	44	223
10	26	31	24	27	108
11	12	19	10	15	56

TOTALS 10776
AVERAGE 117.1 period 468.5

Peak AM Hour is *** 6:00am to 7:00am ***
Volume Lane 1 : 928
Peak Hour Factor : 0.784
Peak / Day Total : 0.086

Peak PM Hour is *** 4:15pm to 5:15pm ***
Volume Lane 1 : 1172
Peak Hour Factor : 0.961
Peak / Day Total : 0.109

1 24/97
9 40:24

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File ID : 4
Info 1 :
Info 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS AVERAGED

Hour starts	1-NB, Monona 0	approa 15	Hour 30	Graph 45	Hour Total	Graph 0	1200
AM							
12	5	7	5	8	25	*	
1	6	3	5	3	17	*	
2	8	7	3	7	25	*	
3	6	5	8	8	27	*	
4	13	12	25	37	87	****	
5	48	74	132	118	372	*****	
6	197	243	296	192	928	*****	
7	122	117	118	132	489	*****	
8	122	135	121	120	498	*****	
9	161	136	164	169	630	*****	
10	188	193	154	176	711	*****	
11	221	246	193	160	820	*****	
PM							
12	165	180	203	236	784	*****	
1	207	209			416	*****	
2			128	149	277	*****	
3	209	243	218	228	898	*****	
4	255	288	276	303	1122	*****	
5	305	271	209	193	978	*****	
6	163	176	140	103	582	*****	
7	129	102	86	98	415	*****	
8	81	75	74	58	288	*****	
9	79	50	50	44	223	*****	
10	26	31	24	27	108	****	
11	12	19	10	15	56	***	

TALS 11244
AVERAGE 122.2 period 488.9

Peak AM Hour is *** 6:00am to 7:00am ***
Volume Lane 1 : 928
Peak Hour Factor : 0.784
Peak / Day Total : 0.083

Peak PM Hour is *** 4:15pm to 5:15pm ***
Volume Lane 1 : 1172
Peak Hour Factor : 0.961
Peak / Day Total : 0.104

11/24/97
24:33

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Page: 1

*** Single Channel 15 Minute ***

File ID : 2
Info 1 :
Info 2 :

Date : Nov 19, 1997 Wed
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour	1-EB, Coldspring	ap	Hour	Graph	
Starts	0	15	30	45	Total

AM						
12						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
PM						
12						
1						
2			3	5	8	*****
3	2	4	5	8	19	*****
4	3	4	4	2	13	*****
5	2	1	2	5	10	*****
6	4	4	1	1	10	*****
7	2	1	0	2	5	*****
8	1	2	2	1	6	*****
9	0	1	1	1	3	*****
10	1	1	1	0	3	*****
11	0	1	1	0	2	****

TOTALS					79
AVERAGE	2.1	period			8.3

Peak PM Hour is *** 3:15pm to 4:15pm ***
Volume Lane 1 : 20
Peak Hour Factor : 0.625
Peak / Day Total : 0.253

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*** Single Channel 15 Minute ***

Date : Nov 20, 1997 Thu
 Factor : 1.00

Site ID : 2
 Info 1 :
 Info 2 :

Lane 1-Normal, Axle, /2

Hour	1-EB, Coldspring ap				Hour	Graph	
Starts	0	15	30	45	Total	0	25
AM							
12	0	0	0	0	0	*	
1	0	0	0	0	0	*	
2	1	0	0	0	1	**	
3	0	0	1	0	1	**	
4	0	0	1	1	2	****	
5	0	0	1	0	1	**	
6	3	3	2	1	9	*****	
7	2	4	6	2	14	*****	
8	4	1	1	2	8	*****	
9	1	1	3	2	7	*****	
10	1	0	0	2	3	*****	
11	1	2	1	2	6	*****	
PM							
12	3	6	1	5	15	*****	
1	3	2	2	1	8	*****	
2	0	5			5	*****	
3							
4							
5							
6							
7							
8							
9							
10							
11							

TALS 80
 VERAGE 1.4 period 5.5

Peak AM Hour is *** 7:15am to 8:15am ***
 Volume Lane 1 : 16
 Peak Hour Factor : 0.667
 Peak / Day Total : 0.200

Peak PM Hour is *** 12:00pm to 1:00pm ***
 Volume Lane 1 : 15
 Peak Hour Factor : 0.625
 Peak / Day Total : 0.188

24/97
24:33

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e ID : 2
..fo 1 :
nfo 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS COMBINED

Hour	1-EB	Coldspring	ap	Hour	Graph	
Starts	0	15	30	45	Total	0
M						
2	0	0	0	0	0	*
1	0	0	0	0	0	*
2	1	0	0	0	1	**
3	0	0	1	0	1	**
4	0	0	1	1	2	****
5	0	0	1	0	1	**
6	3	3	2	1	9	*****
7	2	4	6	2	14	*****
8	4	1	1	2	8	*****
9	1	1	3	2	7	*****
0	1	0	0	2	3	*****
11	1	2	1	2	6	*****
PM						
2	3	6	1	5	15	*****
1	3	2	2	1	8	*****
2	0	5	3	5	13	*****
3	2	4	5	8	19	*****
4	3	4	4	2	13	*****
5	2	1	2	5	10	*****
6	4	4	1	1	10	*****
7	2	1	0	2	5	*****
8	1	2	2	1	6	*****
9	0	1	1	1	3	*****
0	1	1	1	0	3	*****
11	0	1	1	0	2	****

VALUES 159
AVERAGE 1.7 period 6.6

Peak AM Hour is *** 7:15am to 8:15am ***
Volume Lane 1 : 16
Peak Hour Factor : 0.667
Peak / Day Total : 0.101

Peak PM Hour is *** 3:15pm to 4:15pm ***
Volume Lane 1 : 20
Peak Hour Factor : 0.625
Peak / Day Total : 0.126

24/97
24:33

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e ID : 2
Info 1 :
Info 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS AVERAGED

Hour	1-EB, Coldspring	ap	Hour	Graph	25
arts	0	15	30	45	Total
M					
2	0	0	0	0	0
1	0	0	0	0	0
2	1	0	0	0	1
3	0	0	1	0	1
4	0	0	1	1	2
5	0	0	1	0	1
6	3	3	2	1	9
7	2	4	6	2	14
8	4	1	1	2	8
9	1	1	3	2	7
10	1	0	0	2	3
11	1	2	1	2	6
PM					
2	3	6	1	5	15
1	3	2	2	1	8
2	0	5	3	5	13
3	2	4	5	8	19
4	3	4	4	2	13
5	2	1	2	5	10
6	4	4	1	1	10
7	2	1	0	2	5
8	1	2	2	1	6
9	0	1	1	1	3
10	1	1	1	0	3
11	0	1	1	0	2

TOTALS 159
AVERAGE 1.7 period 6.6

Peak AM Hour is *** 7:15am to 8:15am ***
Volume Lane 1 : 16
Peak Hour Factor : 0.667
Peak / Day Total : 0.101

Peak PM Hour is *** 3:15pm to 4:15pm ***
Volume Lane 1 : 20
Peak Hour Factor : 0.625
Peak / Day Total : 0.126

12/24/97
28:15

Traffic Engineering Services Inc.
890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
(414)797-9097 Fax (414)797-9098

Page: 1

*** Single Channel 15 Minute ***

File ID : 1
Info 1 :
Info 2 :

Date : Nov 19, 1997 Wed
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour	1-WB	Coldspring	ap	Hour	Graph	
Starts	0	15	30	45	Total	0

AM						
12						
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
PM						
12						
1						
2			12	10	22	*****
3	14	12	48	9	83	*****
4	11	9	7	10	37	*****
5	10	7	16	8	41	*****
6	22	17	8	10	57	*****
7	20	10	17	12	59	*****
8	44	20	8	2	74	*****
9	2	1	0	1	4	**
10	0	2	0	0	2	*
11	0	0	0	1	1	*

TOTALS 380
AVERAGE 10.0 period 40.0

Peak PM Hour is *** 7:30pm to 8:30pm ***
Volume Lane 1 : 93
Peak Hour Factor : 0.528
Peak / Day Total : 0.245

24/97
28:15

Traffic Engineering Services Inc.
890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
(414)797-9097 Fax(414)797-9098

Page: 2

*** Single Channel 15 Minute ***

File ID : 1
Info 1 :
Info 2 :

Date : Nov 20, 1997 Thu
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour Starts	1-WB, 0	Coldspring 15	ap 30	Hour 45	Total	Graph 0	125
11AM							
12	0	1	0	0	1	*	
1	0	1	0	0	1	*	
2	0	0	0	0	0	*	
3	0	0	0	0	0	*	
4	0	0	2	0	2	*	
5	0	0	1	6	7	***	
6	5	2	2	2	11	****	
7	7	31	49	37	124	*****	
8	5	14	4	6	29	*****	
9	6	2	4	7	19	*****	
10	6	3	11	5	25	*****	
11	9	19	10	12	50	*****	
12PM							
1	12	3	4	21	40	*****	
2	14	5	14	17	50	*****	
3	19	9			28	*****	
4							
5							
6							
7							
8							
9							
10							
11							

FALSE 387
AVERAGE 6.7 period 26.7

Peak AM Hour is *** 7:00am to 8:00am ***
Volume Lane 1 : 124
Peak Hour Factor : 0.633
Peak / Day Total : 0.320

Peak PM Hour is *** 1:30pm to 2:30pm ***
Volume Lane 1 : 59
Peak Hour Factor : 0.776
Peak / Day Total : 0.152

24/97
28:15

Traffic Engineering Services Inc.
890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
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Page: 3

***** Single Channel 15 Minute Final Report (page 1 of 2) *****

File ID : 1
Info 1 :
Info 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS COMBINED

Hour Starts	1-WB, 0	Coldspring 15	ap 30	Hour 45	Total	Graph 0	125
1M							
2	0	1	0	0	1	*	
1	0	1	0	0	1	*	
2	0	0	0	0	0	*	
3	0	0	0	0	0	*	
4	0	0	2	0	2	*	
5	0	0	1	6	7	***	
6	5	2	2	2	11	****	
7	7	31	49	37	124	*****	
8	5	14	4	6	29	*****	
9	6	2	4	7	19	*****	
10	6	3	11	5	25	*****	
11	9	19	10	12	50	*****	
12M							
2	12	3	4	21	40	*****	
1	14	5	14	17	50	*****	
2	19	9	12	10	50	*****	
3	14	12	48	9	83	*****	
4	11	9	7	10	37	*****	
5	10	7	16	8	41	*****	
6	22	17	8	10	57	*****	
7	20	10	17	12	59	*****	
8	44	20	8	2	74	*****	
9	2	1	0	1	4	**	
10	0	2	0	0	2	*	
11	0	0	0	1	1	*	

FALSE
AVERAGE 8.0 period 767 32.0

Peak AM Hour is *** 7:00am to 8:00am ***
Volume Lane 1 : 124
Peak Hour Factor : 0.633
Peak / Day Total : 0.162

Peak PM Hour is *** 7:30pm to 8:30pm ***
Volume Lane 1 : 93
Peak Hour Factor : 0.528
Peak / Day Total : 0.121

'24/97
28:15

Traffic Engineering Services Inc.
890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
(414)797-9097 Fax(414)797-9098

Page: 4

***** Single Channel 15 Minute Final Report (page 2 of 2) *****

e ID : 1
fo 1 :
nfo 2 :

Start Date : Nov 19, 1997 Wed
End Date : Nov 20, 1997 Thu
Adj. Factor: 1.00

ALL DAYS AVERAGED

Hour	1-WB	Coldspring	ap	Hour	Graph	
arts	0	15	30	45	0	125
M						
2	0	1	0	0	1	*
1	0	1	0	0	1	*
2	0	0	0	0	0	*
3	0	0	0	0	0	*
4	0	0	2	0	2	*
5	0	0	1	6	7	***
6	5	2	2	2	11	****
7	7	31	49	37	124	*****
8	5	14	4	6	29	*****
9	6	2	4	7	19	*****
10	6	3	11	5	25	*****
11	9	19	10	12	50	*****
PM						
12	12	3	4	21	40	*****
1	14	5	14	17	50	*****
2	19	9	12	10	50	*****
3	14	12	48	9	83	*****
4	11	9	7	10	37	*****
5	10	7	16	8	41	*****
6	22	17	8	10	57	*****
7	20	10	17	12	59	*****
8	44	20	8	2	74	*****
9	2	1	0	1	4	**
10	0	2	0	0	2	*
11	0	0	0	1	1	*

WALS 767
BRAGE 8.0 period 32.0

Peak AM Hour is *** 7:00am to 8:00am ***
Volume Lane 1 : 124
Peak Hour Factor : 0.633
Peak / Day Total : 0.162

Peak PM Hour is *** 7:30pm to 8:30pm ***
Volume Lane 1 : 93
Peak Hour Factor : 0.528
Peak / Day Total : 0.121

Monona Drive & Coldspring
11/19 and 11/20 1997

HOUR	STARTS	SB	WB	NB	EB	NB + SB
12 AM		21	1	25	0	46
1		21	1	17	0	38
2		14	0	25	1	39
3		14	0	27	1	41
4		24	2	87	2	111
5		69	7	372	1	441
6		270	11	928	9	1198
7		764	124	489	14	1253
8		515	29	498	8	1013
9		439	19	630	7	1069
10		468	25	711	3	1179
11		559	50	820	6	1379
12 PM		609	40	784	15	1393
1		578	50	416	8	994
2		575	50	277	13	852
3		775	83	898	19	1673
4		911	37	1122	13	2033
5		790	41	978	10	1768
6		555	57	582	10	1137
7		346	59	415	5	761
8		294	74	288	6	582
9		251	4	223	3	474
10		108	2	108	3	216
11		61	1	56	2	117
TOTAL NS						19807

Location : Monona Dr. & Coldspring Rd.
Printer :
Created by:

Vehicle group 1

Time	Southbound				Westbound				Northbound				Eastbound				Total
	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	Other	Right	Thru	Left	
te 11/19/97																	
0	0	0	139	11	0	2	3	14	0	25	161	0	1	0	0	0	356
15	0	0	141	10	0	3	3	15	0	40	159	1	1	0	1	0	374
30	0	0	190	10	0	15	2	18	0	47	190	0	0	2	0	1	475
45	0	2	254	16	0	23	1	15	0	29	235	1	0	6	0	1	583
Total	0	2	724	47	0	43	9	62	0	141	745	2	2	8	1	2	1788
0	0	0	149	3	0	1	0	6	0	11	171	1	0	0	1	2	345
15	0	0	145	2	0	2	2	4	0	2	162	0	1	1	1	0	322
30	0	0	152	1	0	2	0	5	0	5	154	0	0	0	0	0	319
45	0	0	139	2	0	3	0	2	0	5	145	0	0	0	0	0	296
Total	0	0	585	8	0	8	2	17	0	23	632	1	1	1	2	2	1282
* BREAK *																	
0	0	0	128	0	0	2	0	1	0	6	142	0	1	0	1	2	283
15	0	0	130	1	0	3	0	1	0	5	138	0	0	1	1	2	282
30	0	0	141	0	0	1	1	5	0	4	146	1	1	3	1	0	304
45	0	1	139	1	1	4	0	5	1	2	145	0	0	3	0	1	303
Total	0	1	538	2	1	10	1	12	1	17	571	1	2	7	3	5	1172
0	0	0	187	0	0	0	0	0	1	11	201	0	0	2	0	0	402
15	0	1	191	4	0	5	0	4	0	13	220	0	0	1	0	2	441
30	1	0	173	8	1	8	2	22	1	26	174	6	2	2	0	1	427
45	0	0	201	10	0	4	0	9	0	11	203	0	0	3	2	0	443
Total	1	1	752	22	1	17	2	35	2	61	798	6	2	8	2	3	1713
0	1	1	202	5	1	1	1	8	0	16	162	5	1	4	2	0	410
15	0	1	234	4	0	3	0	4	0	12	223	1	0	2	0	2	486
30	0	2	234	8	1	1	2	3	0	12	248	0	1	4	0	0	516
45	0	0	222	5	0	2	0	3	0	8	230	2	0	2	0	0	474
Total	1	4	892	22	2	7	3	18	0	48	863	8	2	12	2	2	1886
0	0	0	191	5	0	0	0	0	0	7	200	0	0	0	0	0	403
15	0	0	185	4	0	2	0	2	0	2	189	0	0	0	0	2	386
30	0	0	198	2	0	1	0	0	0	3	192	0	0	0	0	0	396
45	0	0	200	1	0	0	0	0	0	2	175	0	0	2	2	0	382
Total	0	0	774	12	0	3	0	2	0	14	756	0	0	2	2	2	1567
TOTAL*	2	8	4265	113	4	88	17	146	3	304	4365	18	9	38	12	16	9408

cation : Gaps and peds at Lofty
her :
ted by:

Traffic Engineering Services, Inc.
890 N. Elm Grove Rd., Suite 211
Elm Grove, WI 53122
(414)797-9097 Fax(414)797-9097

Site Code : 00000002
Start Date: 11/19/97
File I.D. : GAP_002
Page : 1

udy done on : , Northbound/Southbound

		Vehicle group 1																Total Gaps	Avg. Gap
		Gaps (in seconds)																	
Volume	Count	2	4	6	8	10	12	14	16	18	20	22	24	26	28	> 30			
		- 3	- 5	- 7	- 9	- 11	- 13	- 15	- 17	- 19	- 21	- 23	- 25	- 27	- 29	- 31			
11/19/97																			
5	1	18	18	6	2	3	1	1	0	1	1	1	0	0	0	0	52	5	
10	60	12	9	1	1	2	1	0	0	0	0	1	0	0	0	0	27	5	
1:45	1	26	20	12	4	3	2	0	0	0	0	0	0	0	0	0	67	4	
1:00	1	33	23	5	7	3	1	0	1	0	0	0	0	0	0	0	73	4	
Total	63	89	70	24	14	11	5	1	1	1	1	2	0	0	0	0	219	5	
PAL*	63	89	70	24	14	11	5	1	1	1	1	2	0	0	0	0	219	5	
cent		40.6%	32%	11%	6.4%	5%	2.3%	.5%	.5%	.5%	.5%	.9%	0%	0%	0%	0%			

12/22/97
14:03:33

Traffic Engineering Services Inc.
890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
(414)797-9097 Fax (414)797-9098

Page: 1

*** Single Channel 15 Minute ***

Site ID : LOFTY AVE.
Info 1 :
Info 2 :

Date : Dec 16, 1997 Tue
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour Starts	1-EAST/WEST				Hour Total	Graph	
	0	15	30	45		0	100
AM							
12							
1							
2							
3							
4							
5							
6							
7							
8			2	7	9	****	
9	0	2	0	4	6	***	
10	2	2	23	14	41	*****	
11	8	30	14	15	67	*****	
PM							
12	7	5	3	5	20	*****	
1	3	4	2	8	17	*****	
2	8	9	10	5	32	*****	
3	6	21	49	14	90	*****	
4	2	7	4	6	19	*****	
5	9	6	9	9	33	*****	
6	5	4	9	10	28	*****	
7	3	7	11	4	25	*****	
8	3	2	4	5	14	*****	
9	0	7	5	4	16	*****	
10	0	0	9	0	9	****	
11	2	0	5	3	10	****	
TOTALS					436		
AVERAGE		7.0 period			28.1		

Peak AM Hour is *** 10:30am to 11:30am ***
Volume Lane 1 : 75
Peak Hour Factor : 0.625
Peak / Day Total : 0.172

Peak PM Hour is *** 3:00pm to 4:00pm ***
Volume Lane 1 : 90
Peak Hour Factor : 0.459
Peak / Day Total : 0.206

Dec 22 97 02:20p

Jim Bojar

414-456-9989

p.3

12/22/97
4:03:33

Traffic Engineering Services Inc.
890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
(414)797-9097 Fax (414)797-9098

Page: 2

*** Single Channel 15 Minute ***

Site ID : LOFTY AVE.
Info 1 :
Info 2 :

Date : Dec 17, 1997 Wed
Factor : 1.00

Lane 1-Normal, Axle, /2

Hour	1-EAST/WEST				Hour	Graph	100
Starts	0	15	30	45	Total	0	
AM							
12	0	0	2	0	2	*	
1	0	1	2	2	5	***	
2	0	0	0	0	0	*	
3	0	0	0	0	0	*	
4	0	0	0	0	0	*	
5	0	0	2	0	2	*	
6	0	0	0	1	1	*	
7	2	14	31	14	61	*****	
8	3	4	5	2	14	*****	
9	3	6	2	2	13	*****	
10	6	2	3	2	13	*****	
11	12	30	28	21	91	*****	
PM							
12	1	4	4	4	13	*****	
1	7	7	0	10	24	*****	
2	3	4	9	8	24	*****	
3	2	12	18		32	*****	
4							
5							
6							
7							
8							
9							
10							
11							

TOTALS 295
AVERAGE 4.7 period 18.7

Peak AM Hour is *** 11:00am to 12:00pm ***
Volume Lane 1 : 91
Peak Hour Factor : 0.758
Peak / Day Total : 0.308

Peak PM Hour is *** 2:45pm to 3:45pm ***
Volume Lane 1 : 40
Peak Hour Factor : 0.556
Peak / Day Total : 0.136

12/22/97
14:03:33

Traffic Engineering Services Inc.
890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
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Page: 3

***** Single Channel 15 Minute Final Report (page 1 of 2) *****

Site ID : LOFTY AVE.

Info 1 :

Info 2 :

Start Date : Dec 16, 1997 Tue

End Date : Dec 17, 1997 Wed

Adj. Factor: 1.00

ALL DAYS COMBINED

Hour Starts	1-EAST/WEST	Hour Total	Graph	175
0	15	30	45	0
AM				
12	0	0	2	0
1	0	1	2	2
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	2	0
6	0	0	0	1
7	2	14	31	14
8	3	4	7	9
9	3	8	2	6
10	8	4	26	16
11	20	60	42	36
PM				
12	8	9	7	9
1	10	11	2	18
2	11	13	19	13
3	8	33	67	14
4	2	7	4	6
5	9	6	9	9
6	5	4	9	10
7	3	7	11	4
8	3	2	4	5
9	0	7	5	4
10	0	0	9	0
11	2	0	5	3

TOTALS 731
AVERAGE 7.6 period 30.5

Peak AM Hour is *** 11:00am to 12:00pm ***

Volume Lane 1 : 158

Peak Hour Factor : 0.658

Peak / Day Total : 0.216

Peak PM Hour is *** 3:00pm to 4:00pm ***

Volume Lane 1 : 122

Peak Hour Factor : 0.455

Peak / Day Total : 0.167

12/22/97
14:03:33

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890 N. Elm Grove Rd. Suite 211
Elm Grove, WI 53122
(414)797-9097 Fax (414)797-9098

Page: 4

***** Single Channel 15 Minute Final Report (page 2 of 2) *****

Site ID : LOFTY AVE.
Info 1 :
Info 2 :

Start Date : Dec 16, 1997 Tue
End Date : Dec 17, 1997 Wed
Adj. Factor: 1.00

ALL DAYS AVERAGED

Hour	1-EAST/WEST	Hour	Graph	100
Starts	0 15 30 45	Total	0	
AM				
12	0 0 2 0	2	*	
1	0 1 2 2	5	***	
2	0 0 0 0	0	*	
3	0 0 0 0	0	*	
4	0 0 0 0	0	*	
5	0 0 2 0	2	*	
6	0 0 0 1	1	*	
7	2 14 31 14	61	*****	
8	3 4 4 5	23	*****	
9	2 4 1 3	10	*****	
10	4 2 13 8	27	*****	
11	10 30 21 18	79	*****	
PM				
12	4 5 4 5	17	*****	
1	5 6 1 9	21	*****	
2	6 7 10 7	28	*****	
3	4 17 34 14	122	*****	
4	2 7 4 6	19	*****	
5	9 6 9 9	33	*****	
6	5 4 9 10	28	*****	
7	3 7 11 4	25	*****	
8	3 2 4 5	14	*****	
9	0 7 5 4	16	*****	
10	0 0 9 0	9	****	
11	2 0 5 3	10	*****	

TOTALS 561
AVERAGE 4.5 period 18.0

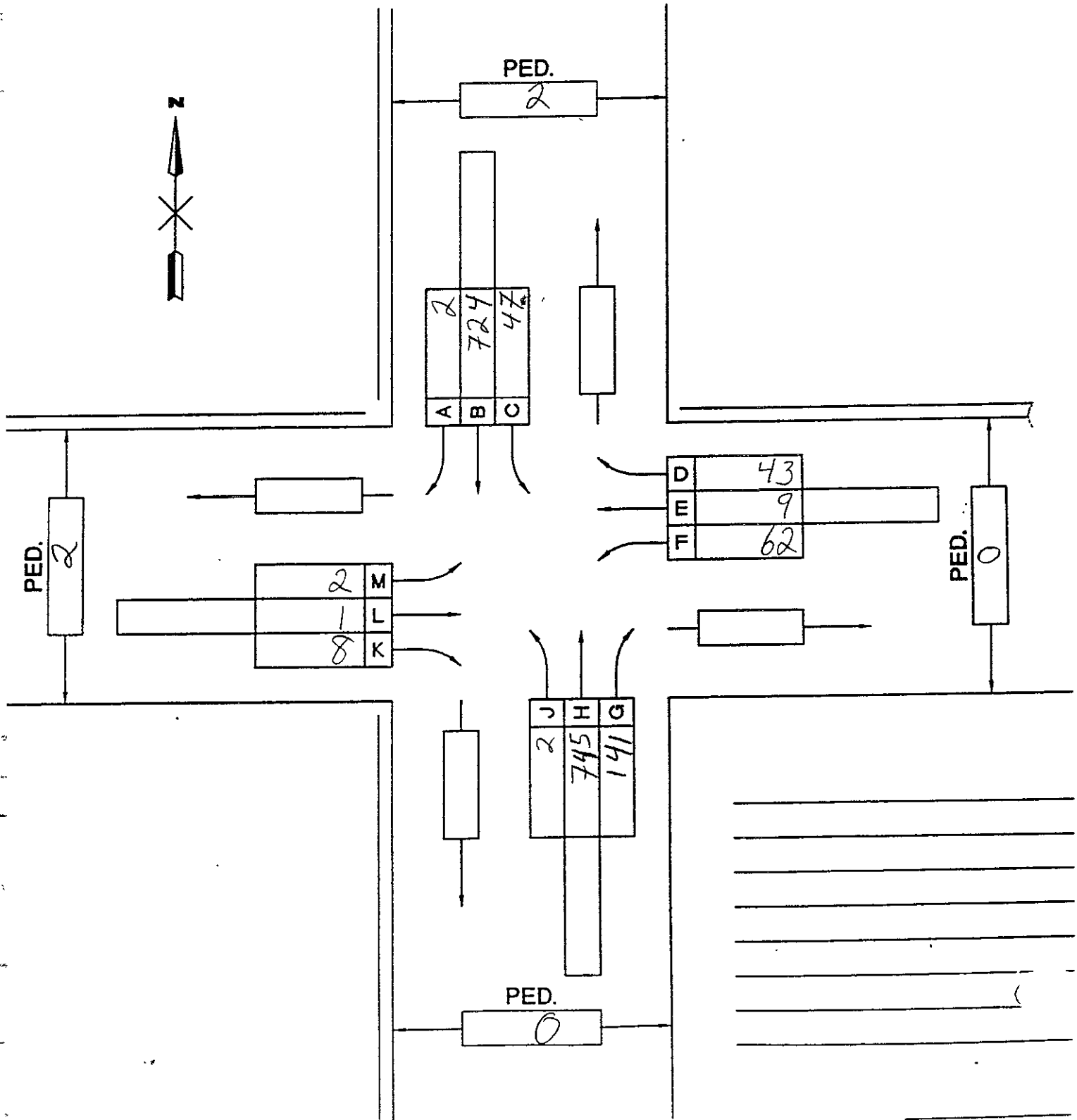
Peak AM Hour is *** 11:00am to 12:00pm ***
Volume Lane 1 : 79
Peak Hour Factor : 0.658
Peak / Day Total : 0.141

Peak PM Hour is *** 3:00pm to 4:00pm ***
Volume Lane 1 : 69
Peak Hour Factor : 0.507
Peak / Day Total : 0.123

TRAFFIC SURVEY VEHICLE VOLUME COUNT GRAPHIC SUMMARY SHEET

E-T-704-70

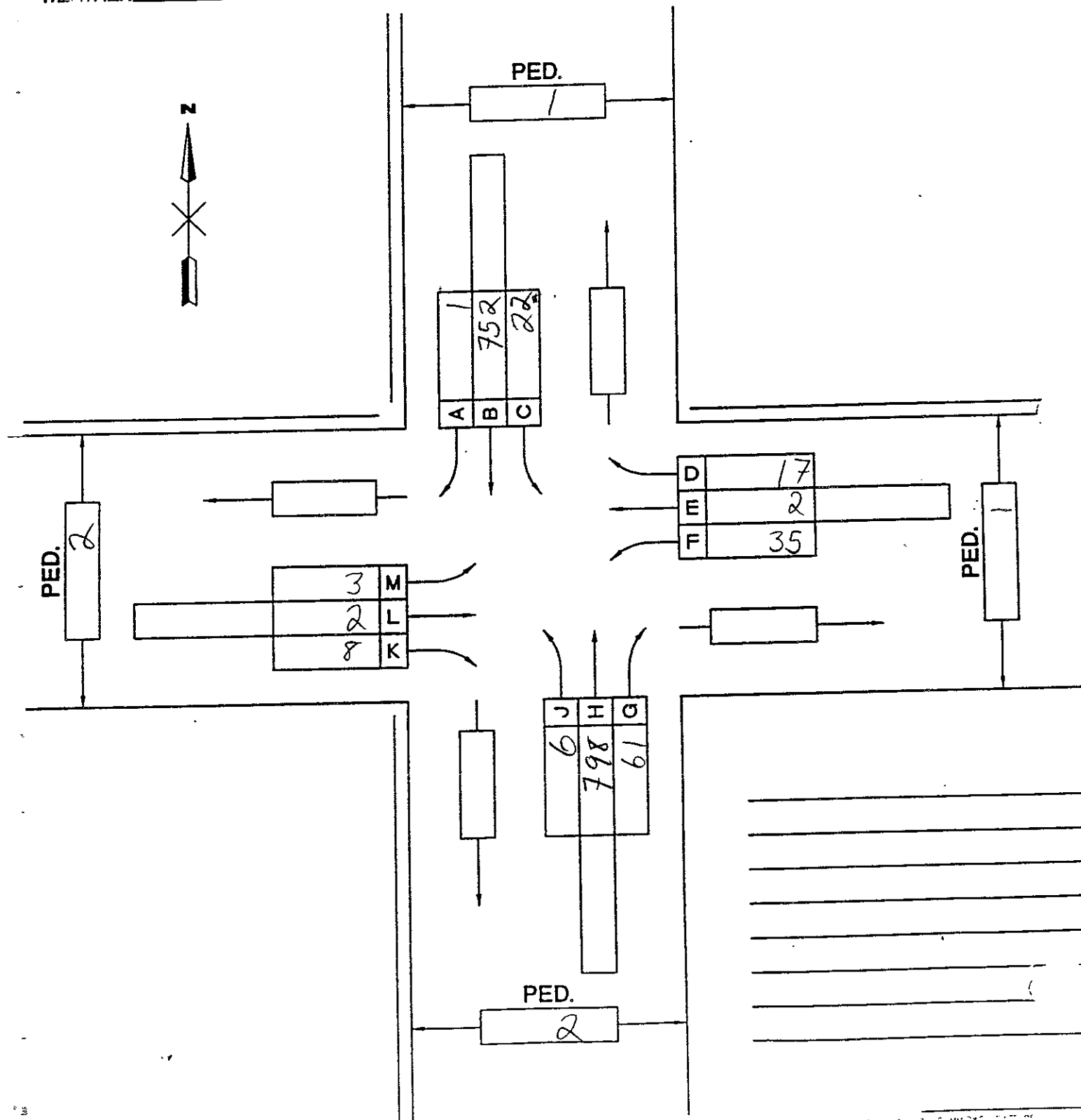
DATE 11/19/97 DAY WEDNESDAY TIME 7 AM TO 8 AM SHEET 1 OF 1
 LOCATION: DISTRICT 1 COUNTY DANE RURAL CITY
 INTERSECTION MONONA DRIVE AND COLDSPRING AVENUE
 WEATHER CLEAR ROAD CONDITION DRY OBSERVERS



TRAFFIC SURVEY VEHICLE VOLUME COUNT GRAPHIC SUMMARY SHEET

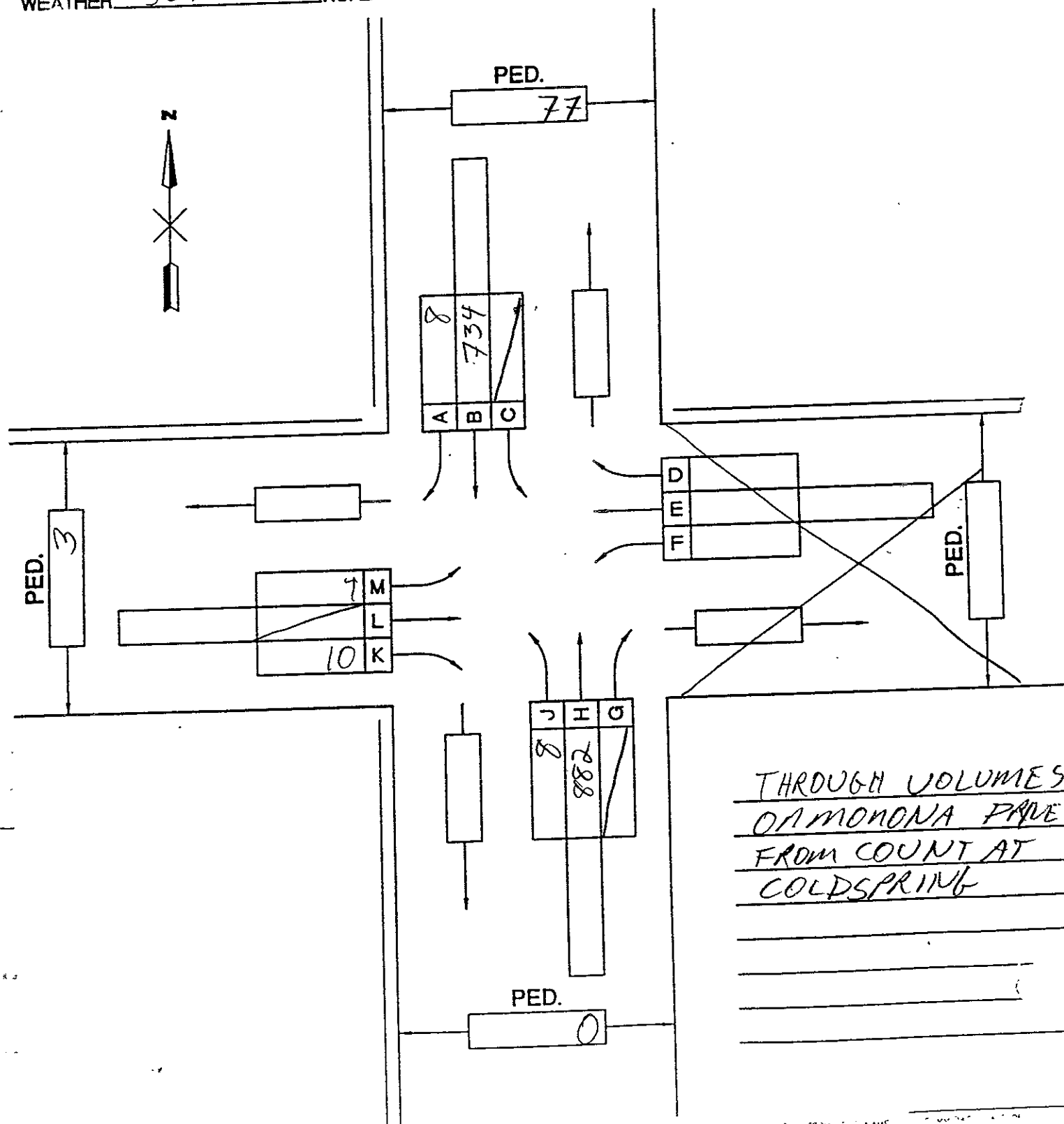
E-T-704-70

DATE 11/19/97 DAY WEDNESDAY TIME 3PM TO 4PM SHEET OF 4
 LOCATION: DISTRICT 1 COUNTY DANE RURAL CITY ✓
 INTERSECTION MONONA DRIVE AND COLDSRING AVENUE
 WEATHER CLEAR ROAD CONDITION DRY OBSERVERS



TRAFFIC SURVEY VEHICLE VOLUME COUNT
GRAPHIC SUMMARY SHEET
E-T-704-70

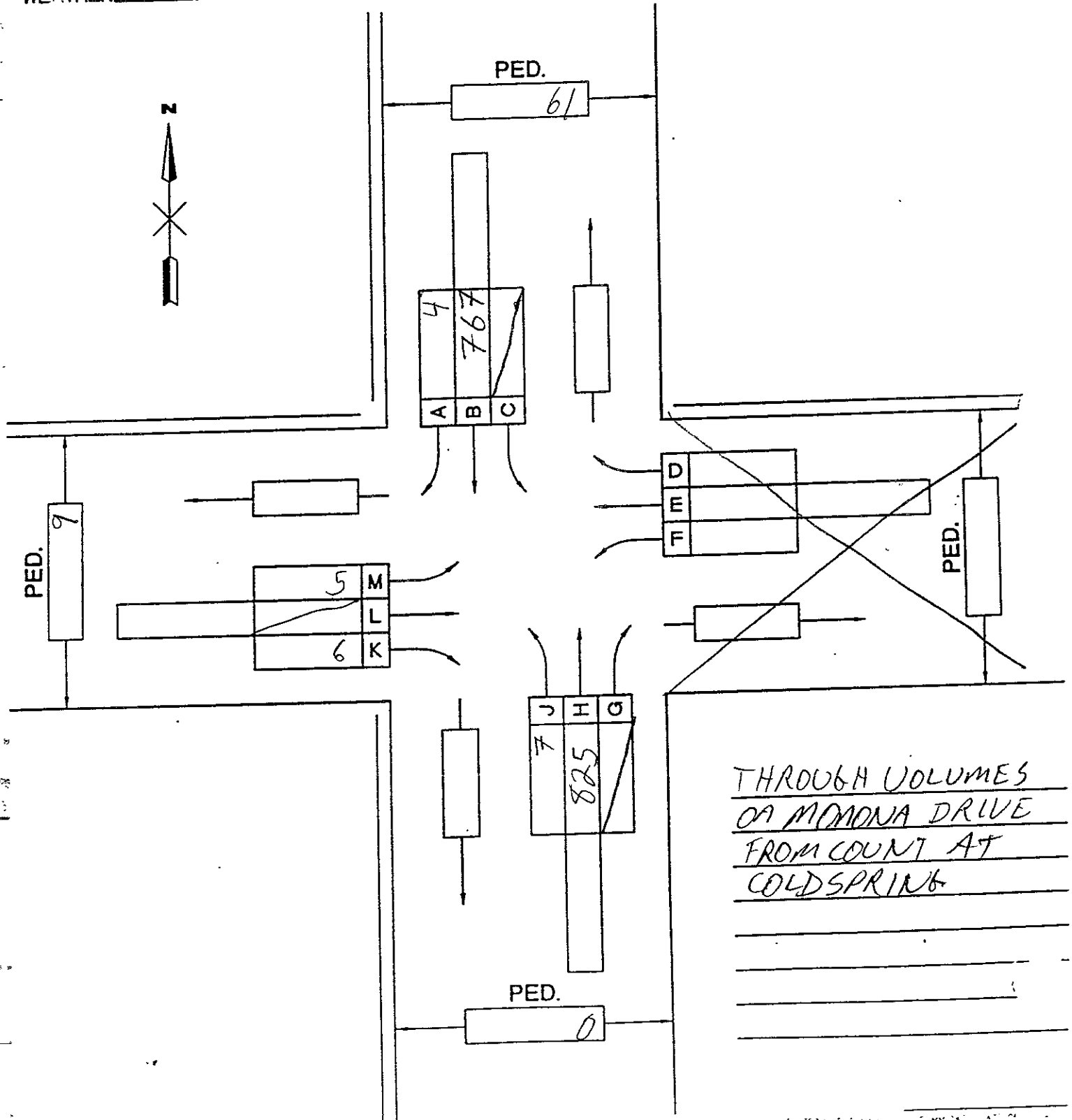
DATE 12/16/97 DAY TUESDAY TIME 7:15 AM TO 8:15 AM SHEET OF
LOCATION: DISTRICT 1 COUNTY DANE RURAL CITY ✓
INTERSECTION MONONA DRIVE AND LOFTY AVENUE
WEATHER SUNNY ROAD CONDITION DRY OBSERVERS



TRAFFIC SURVEY VEHICLE VOLUME COUNT GRAPHIC SUMMARY SHEET

FD-704-70

DATE 12/17/97 DAY WEDNESDAY TIME 3:15 PM TO 4:15 PM SHEET 1 OF 1
 LOCATION: DISTRICT 1 COUNTY DANE RURAL CITY
 INTERSECTION MONONA DRIVE AND LOFTY AVENUE
 WEATHER SUNNY ROAD CONDITION DRY OBSERVERS



Traffic Count Summary

Location: Monona Drive and Lofty Avenue

Date: 12/16/97

	Southbound				Northbound				Eastbound			
	ped	right	through	left	ped	right	through	left	ped	right	through	left
07:15	13	2	141	n/a	0	n/a	199	3	0	1	n/a	2
07:30	33	4	190	n/a	0	n/a	237	4	0	3	n/a	1
07:45	30	1	254	n/a	0	n/a	264	1	3	6	n/a	1
08:00	1	1	149	n/a	0	n/a	182	0	0	0	n/a	0
total	77	8	734		0		882	8	3	10		4

Date: 12/17/97

	Southbound				Northbound				Eastbound			
	ped	right	through	left	ped	right	through	left	ped	right	through	left
15:15	26	1	191	n/a	0	n/a	233	1	1	0	n/a	1
15:30	30	0	173	n/a	0	n/a	200	5	2	5	n/a	1
15:45	5	1	201	n/a	0	n/a	214	0	2	0	n/a	1
16:00	0	2	202	n/a	0	n/a	178	1	4	1	n/a	2
total	61	4	767		0		825	7	9	6		5

Draft

APPENDIX B
TRIP GENERATION

B.0 Trip Generation

A. Existing Conditions

The school site currently has 182 parking spaces. These are generally completely filled during school, with an additional 50 school related vehicles observed parked on local streets in adjacent neighborhoods. Hence there are at least 232 vehicles making a one way trip to the site in the morning. Additionally, there are vehicles dropping off students in the morning.

B. Existing and Projected Calculated Trips

The school currently has 750 students and 132,000 Square Feet. The proposed school will have 1,000 students and 227,000 Square Feet. For a baseline trip generation, the average of trips calculated for students and square footage was used. Note that this calculated figure is less than the observed trips. To not overstate the potential for additional trips, however, these lower I.T.E. average trip rates are used. This I.T.E. baseline was factored by the additional number of students to project future trip generation characteristics. The following table summarizes the average trip generation calculations:

Predictive Variable	Value	AM Peak Hour Trips	PM Peak Hour Trips	Daily Trips
Student	750	167 in/59 out	59 in/114 out	998
Square Footage	132,000	229 in/80 out	87 in/169 out	1444
Average existing trips		198 in/70 out	73 in/142 out	1221
Projected future trips: 1,000/750 = 1.3 times existing trips		264 in/93 out	97 in/189 out	1628
Additional future traffic		66 in/23 out	24 in/47 out	407

Table B.1 Trip Generation

B.1 Trip Distribution

A. Alternative A and B3

With Alternative A and B3, all school trips are expected to use the Lofty Avenue/Monona Drive intersection. With alternative B3, some trips may actually use the Monona Drive/Cold Spring Avenue intersection, however by assigning all school traffic to the Lofty Avenue intersection this represents a worst case scenario for operation at the Lofty Avenue intersection. Trips were distributed to the north or south in proportion to the existing AM north south splits at Cold Spring Avenue and Monona Drive. PM north south splits were not used as these are likely not representative of true origins and destinations due to long delays at the east

approach of the Cold Spring Avenue/Monona Drive intersection during the PM peak hour. Hence north south splits were assumed to be 24 percent north and 76 percent south.

B. Alternatives B1, B2 and C1, C2

With Alternatives B1, B2, C1, and C2, all school trips are assumed to use the Monona Drive/Cold Spring Avenue intersection. Some trips may actually use the Lofty Avenue/Monona Drive intersection, however by assigning all school traffic to the Cold Spring Avenue intersection this represents a worst case scenario for operation at the Cold Spring Avenue intersection. Trips were distributed to the north or south in proportion to the existing AM north south splits at Cold Spring Avenue and Monona Drive. PM north south splits were not used as these are likely not representative of true origin destinations due to long delays at the east approach of the Cold Spring Avenue/Monona Drive intersection during the PM peak hour. Hence north south splits were assumed to be 24 percent north and 76 percent south.

Draft

TRAFFIC SURVEY VEHICLE VOLUME COUNT
GRAPHIC SUMMARY SHEET
E-T-704-70

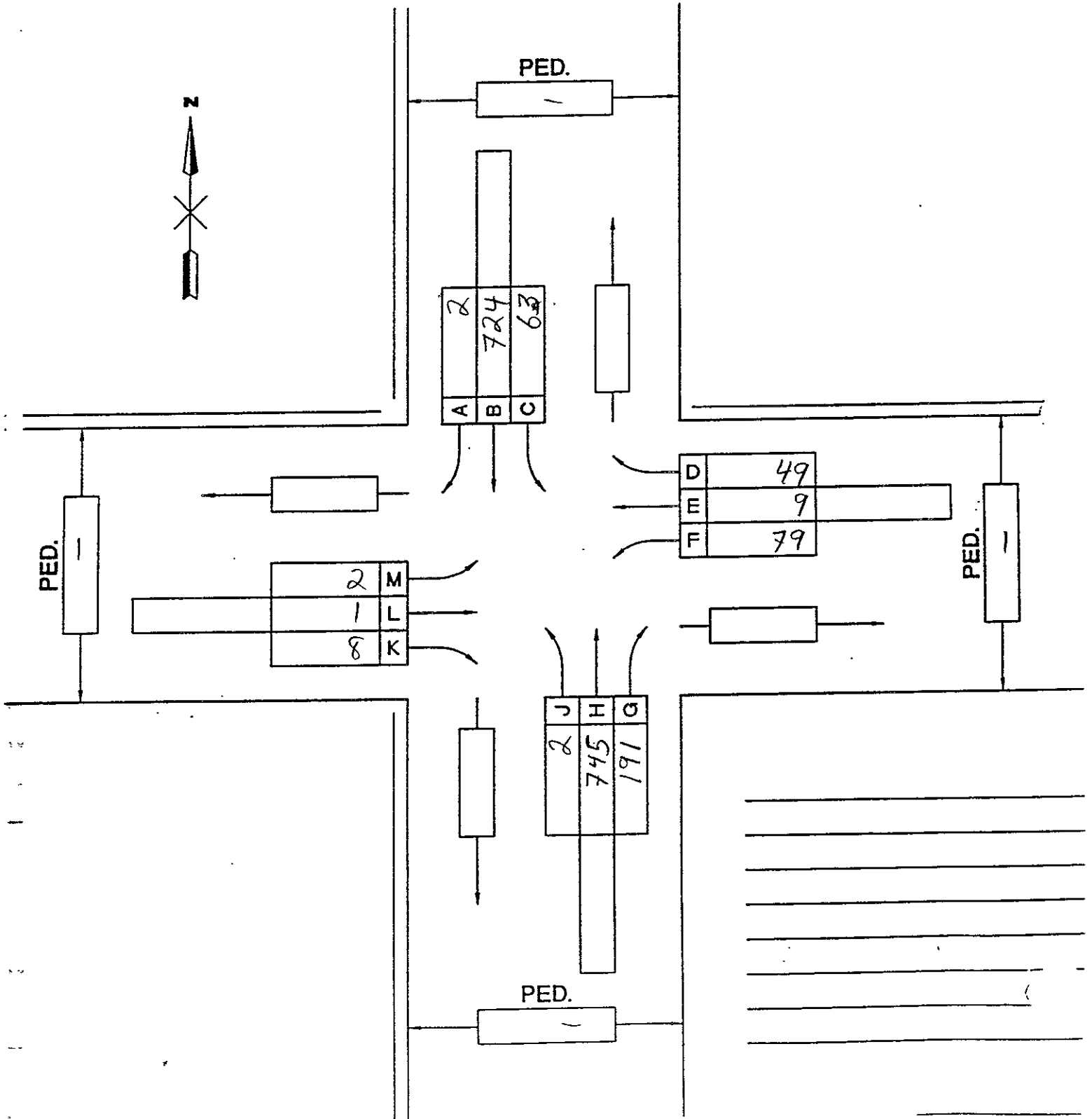
PROJECTED VOLUMES ALTERNATIVE B1, B2, C1, C2

DATE _____ DAY _____ TIME 7AM TO 8AM SHEET _____ OF _____

LOCATION: DISTRICT 1 COUNTY DANE RURAL _____ CITY ✓

INTERSECTION MONONA DRIVE AND GOLDSPRING AVENUE

WEATHER _____ ROAD CONDITION _____ OBSERVERS _____



TRAFFIC SURVEY VEHICLE VOLUME COUNT GRAPHIC SUMMARY SHEET

E-T-704-70

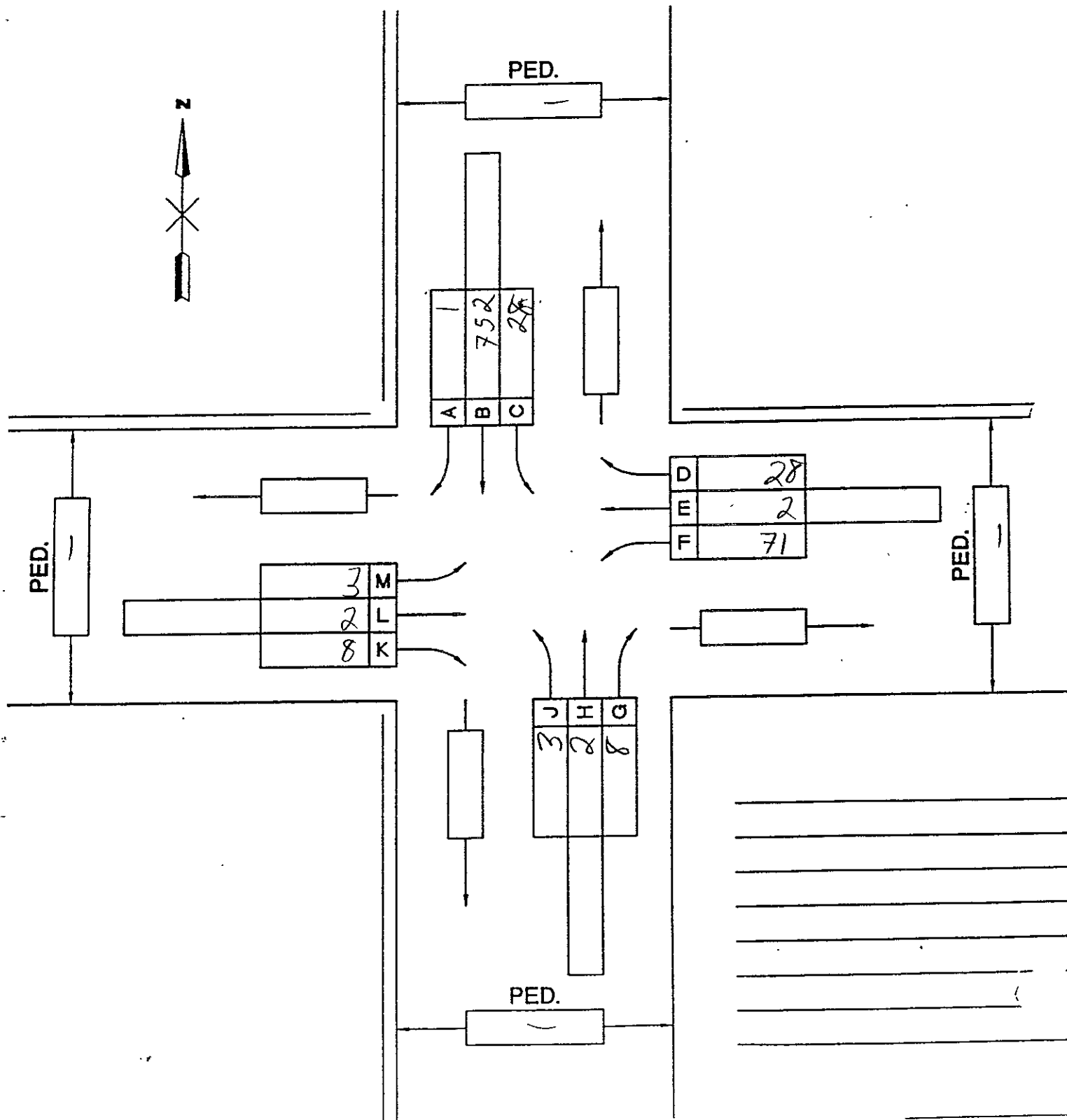
PROJECTED VOLUMES ALTERNATIVE B1, B2, C1, C2

DATE _____ DAY _____ TIME 3PM TO 4PM SHEET _____ OF _____

LOCATION: DISTRICT 1 COUNTY DANE RURAL _____ CITY ✓

INTERSECTION MONONA DRIVE AND COLD SPRING AVENUE

WEATHER _____ ROAD CONDITION _____ OBSERVERS _____



TRAFFIC SURVEY VEHICLE VOLUME COUNT
GRAPHIC SUMMARY SHEET

E-T-704-70

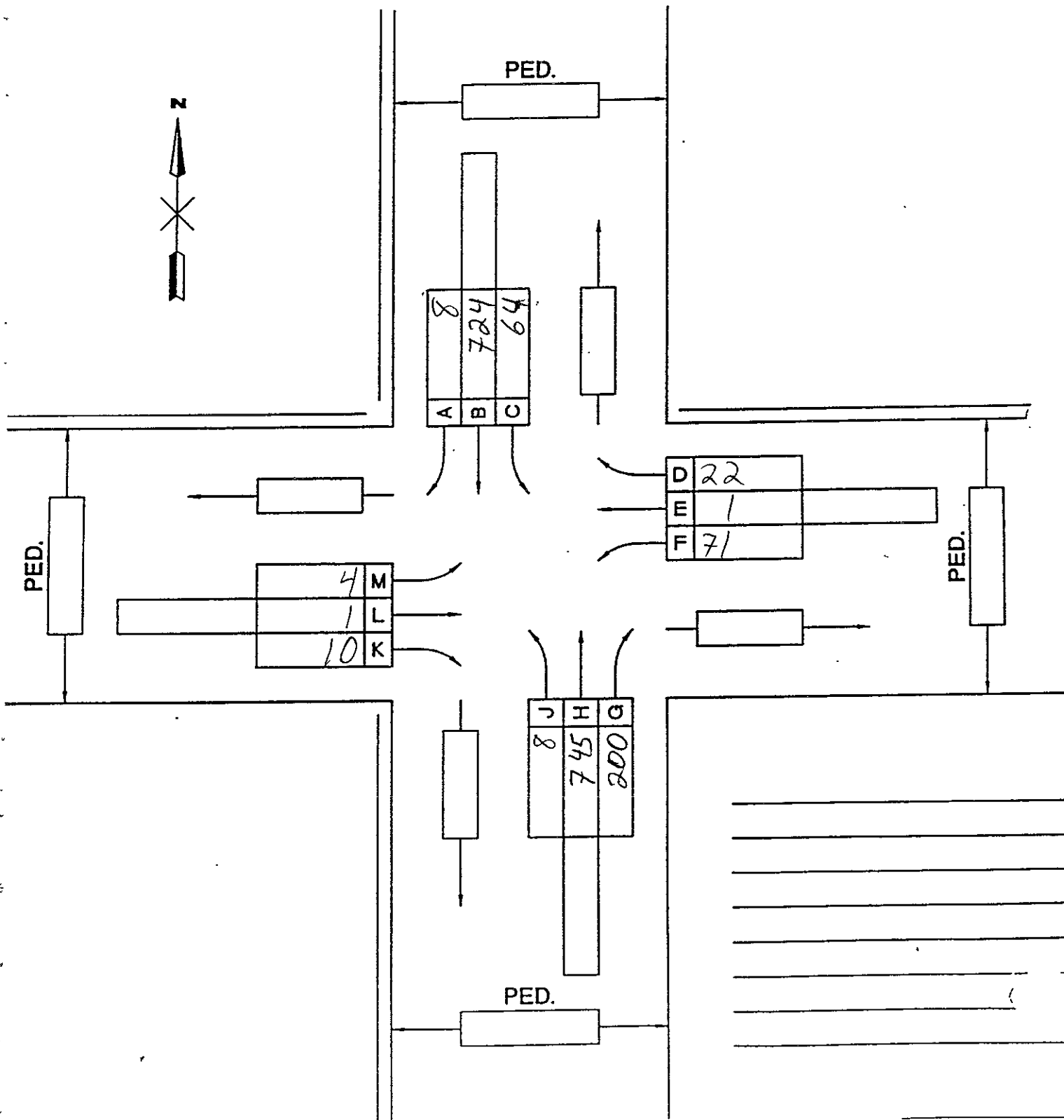
PROJECTED VOLUMES ALTERNATIVE A1, A2, B3

DATE _____ DAY _____ TIME 7AM TO 8AM SHEET _____ OF _____

LOCATION: DISTRICT 1 COUNTY DANE RURAL _____ CITY ✓

INTERSECTION MONONA DRIVE AND LOFTY AVENUE

WEATHER _____ ROAD CONDITION _____ OBSERVERS _____



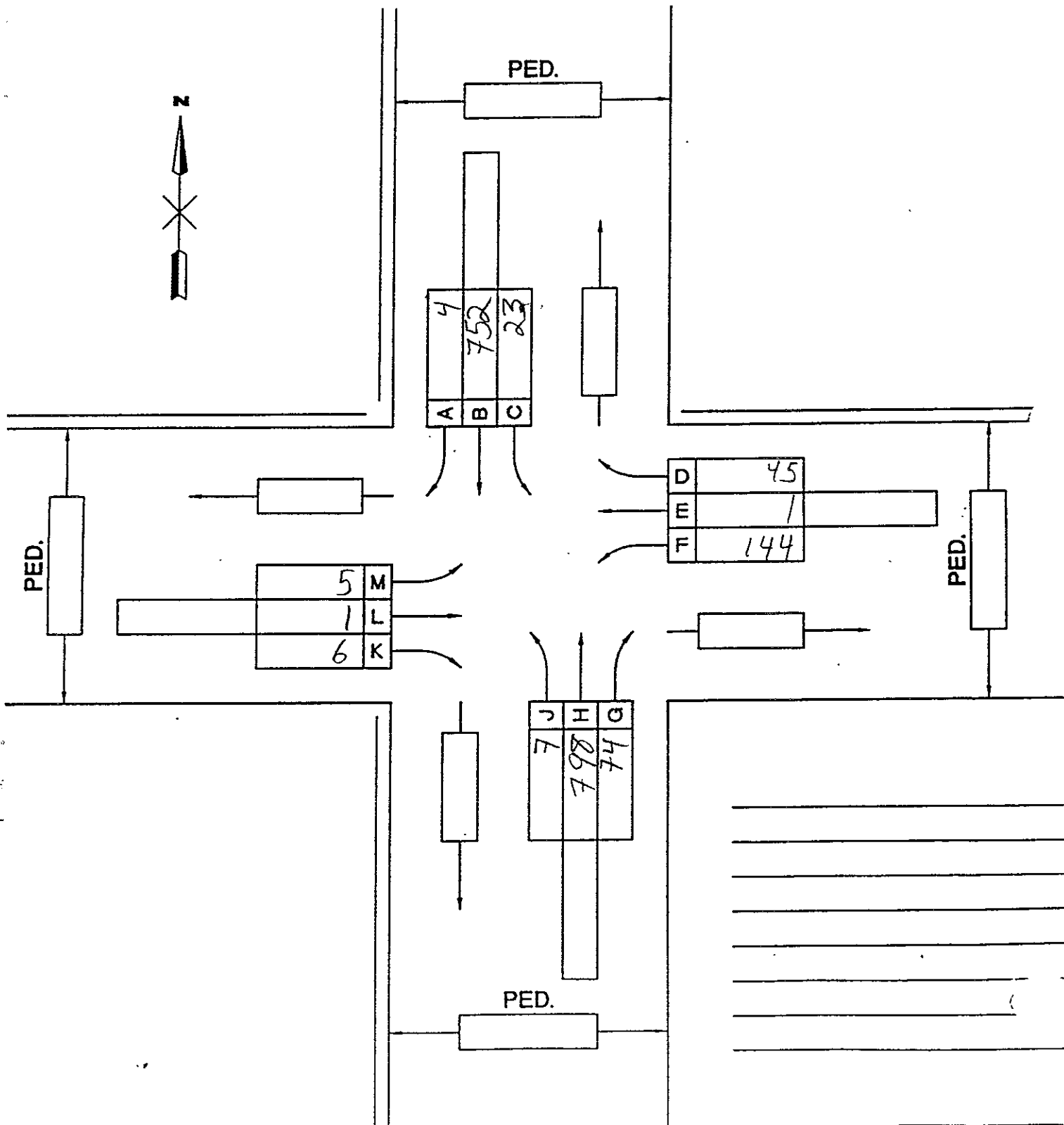
PROJECTED VOLUMES ALTERNATIVE A1, A2, B3

DATE _____ DAY _____ TIME 3PM TO 4PM SHEET _____ OF _____

LOCATION: DISTRICT 1 COUNTY DANE RURAL _____ CITY ✓

INTERSECTION MONONA DRIVE AND LOFTY AVENUE

WEATHER _____ ROAD CONDITION _____ OBSERVERS _____



Draft

APPENDIX C
TRAFFIC ANALYSIS

C.0 Traffic Analysis

A. Existing Conditions

Existing Conditions were modeled using the Highway Capacity Manual Software.

B. Projected Alternatives Operation

Projected alternatives were modeled using the Highway Capacity Manual Software for unsignalized intersections and SIGNAL94 for signalized intersections. SIGNAL94 optimizes signal timing to assist in making consistent comparisons between alternatives. Delay and Level of Service are calculated in SIGNAL94 using Highway Capacity Manual criteria.

C. Recommended Gap

As stated in the I.T.E. Traffic Engineering Handbook, 4th. Edition, p. 78, the recommended pedestrian gap can be computed using the following formula:

$$G = W/S + R + (N-1)/2$$

where:

G = adequate gap time in seconds
W = width in feet of the roadway to be crossed
S = pedestrian walking speed, (we assumed 4.0 ft/sec for this study)
R = assumed to be 3 sec, the time which experience has shown for the typical pedestrian to look both ways, make a decision, and begin to walk across the roadway
(N-1)/2 = the pedestrian clearance interval, N is the 85th percentile group size divided by 5, and 1 represents the first row and 2 the time interval in seconds between rows

For this study, we used the following values:

$$W = 48 \text{ ft}$$

$$S = 4.0 \text{ ft/sec}$$

$$(N-1)/2 = 0 \text{ (we used the minimum gap for one pedestrian to cross Monona Drive)}$$

$$R = 3$$

Then the calculated gap requirement is:

$$G = 48/4.0 + 0 + 3 = 15 \text{ sec}$$

Wisconsin Department of Transportation

Traffic Signal Warrant Summary Sheet

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Section: MONONA DR & COLDSPRING

City/Town/Village: MONONA / MADISON

County: DANE

THIS INTERSECTION IS ANALYZED FOR URBAN WARRANTS. COMMENTS: _____
urban/rural

Note: The warrants for rural areas (70% of urban warrant) are used when the 85% speed on the major street exceeds 40 m.p.h. or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000.

THE ANALYSIS IS BASED ON COUNTS CONDUCTED ON 11/19 & 11/20, 1997, FROM 2:45 PM TO 2:45 PM
DATES DAYS

Warrant Evaluation Summary

Warrants Satisfied

		YES	NO	NOT EVALUATED
Warrant 1	Minimum Vehicular Volume	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Warrant 2	Interruption of Continuous Traffic	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Warrant 3	Minimum Pedestrian Volume	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Warrant 4	School Crossings	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Warrant 5	Progressive Movement	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Warrant 6	Accident Experience	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Warrant 7	Systems	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Warrant 8	Combination of Warrants	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Warrant 9	Four Hour Volumes	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Warrant 10	Peak Hour Delay	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Warrant 11	Peak Hour Volume	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Left Turn Conflict Analysis	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The analysis was conducted by:

BILL PUTNAM

(Name)

STRAND ASSOCIATES, INC.

(Agency)

11/26/97

(Date)

URBAN

TRAFFIC CONTROL SIGNALS IN URBAN AREAS COMPARISON OF WARRANTS 1, 2, 6, 8, 9 AND 11

WARRANT SATISFIED

☐ YES ☒ NO

☐ YES ☒ NO

☐ YES ☒ NO

WARRANT 1 MINIMUM VEHICULAR VOLUME
WARRANT 2 INTERRUPTION OF CONTINUOUS TRAFFIC
WARRANT 8 COMBINATION OF WARRANTS

	Number of Thru Lanes Per Approach	Vehicles on MAJOR STREET (Both Approaches) 8 Hours Minimum to Satisfy Warrant	SAME 8 HOURS		Right Turns Included 100 % Hours Met
			Hours Met	Vehicles on MINOR STREET (One Approach) 8 Hours Minimum to Satisfy Warrant	
Minimum Vehicular Volume	One	500		150	0
		*400		*120	1
	Two or More	600	14	200	
		*480	17	*160	
Interruption of Continuous Traffic	One	750		75	2
		*600		*60	3
	Two or More	900	12	100	
		*720	14	*80	

To satisfy Warrant 8, Combination of Warrants, the 80% requirements need to be met for both Warrants 1 and 2.
Volumes equal to 80% of the normal requirements which should be used for Warrant 6, Accident Experience and for Warrant 8, Combination of Warrants.

Check which hours satisfy warrants 1 and 2 (W1, W2) above:

Clock which hours satisfy warrants 1 and 2 (w1, w2) above.																		
Time	AM							PM										
	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	
W1																		
W2		X								X								

WARRANT 6 ACCIDENT EXPERIENCE

☐ YES ☒ NO

Requirement	Fulfilled
Adequate trials of less restrictive remedies has failed to reduce the accident frequency; and	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
5 or more reportable accidents, susceptible to correction by a traffic signal, within a 12-month period; and	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Warrant 1 - Min. Vehicular Volume <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Warrant 2 - Interruption of Continuous Traffic <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO Warrant 3 - Min. Pedestrian Volume <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	ONE or more of these warrants is 80% satisfied; and <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
Signal installation will not seriously disrupt traffic flow	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO

URBAN

Check which conditions apply and record volumes for the highest four hours.
 o determine if warrant 9 and/or 11 is satisfied, plot the highest four hours on the figures below (4 hours minimum, 8 hours recommended).

	Number of Thru Lanes Per Approach		Time	
	One	Two or More		
MAJOR STREET (Both Approaches)				
MINOR STREET (One Approach)				

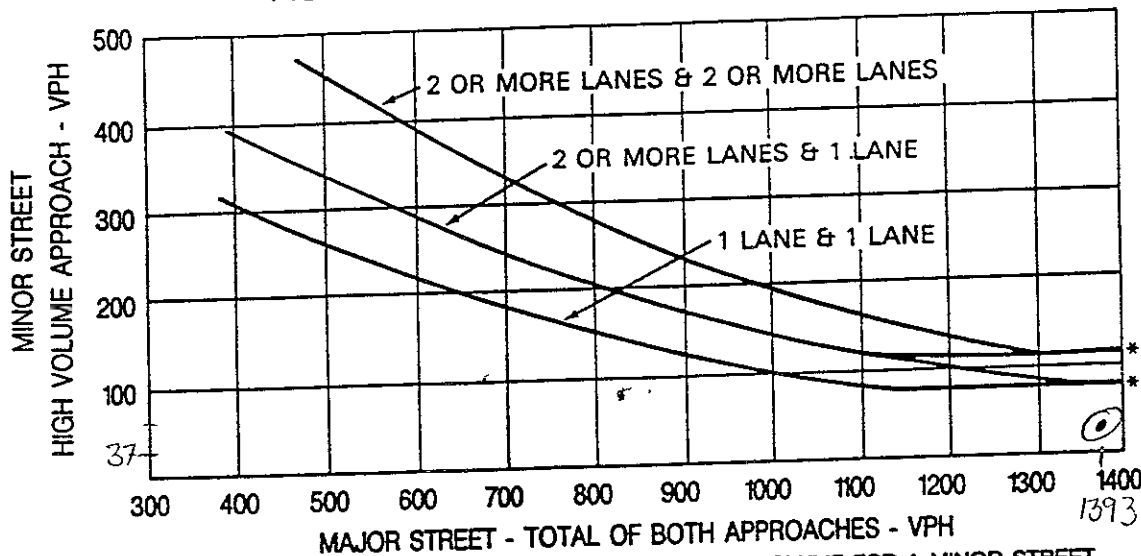
WARRANT SATISFIED

☐ YES ☒ NO

WARRANT 9

FOUR HOUR VOLUME URBAN

FIGURE 4-7. FOUR HOUR VOLUME WARRANT



* NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

(FROM HOSE
COUNT DATA
11/19 - 11/20/97)

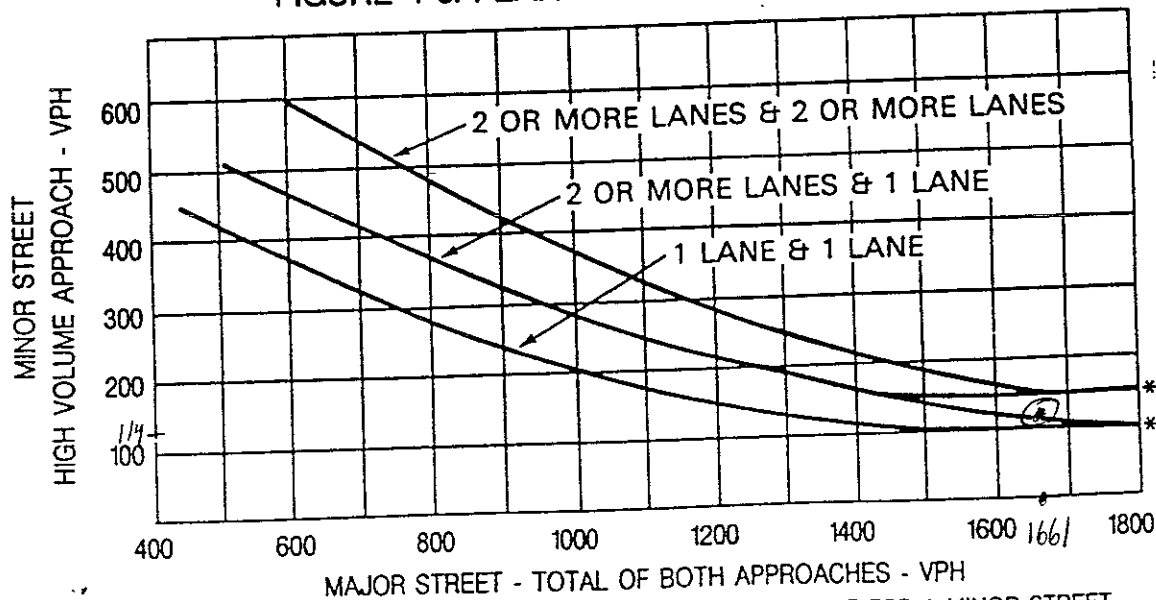
WARRANT SATISFIED

☒ YES ☐ NO

WARRANT 11

PEAK HOUR VOLUME URBAN

FIGURE 4-5. PEAK HOUR VOLUME WARRANT



* NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

(FROM TURN
COUNT DATA
7-8 AM
11/19/97)

Wisconsin Department of Transportation
Traffic Signal Warrant Summary Sheet

Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Section: MONONA DRIVE / COLDSPRING AVENUE

City/Town/Village: MONONA / MADISON

County: DANE

THIS INTERSECTION IS ANALYZED FOR PROJECTED WARRANTS. COMMENTS: PROJECTED

VOLUMES ASSUMING REVISED SCHOOL SITE

The warrants for rural areas (70% of urban warrant) are used when the 85% speed on the major street exceeds 40 m.p.h. or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000.

THE ANALYSIS IS BASED ON COUNTS CONDUCTED ON PROJECTED VOLUMES & 19, FROM AM TO AM
DAYS DAYS

Warrant Evaluation Summary

Warrants Satisfied

YES	NO	NOT EVALUATED
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

- Warrant 1 Minimum Vehicular Volume
- Warrant 2 Interruption of Continuous Traffic
- Warrant 3 Minimum Pedestrian Volume
- Warrant 4 School Crossings
- Warrant 5 Progressive Movement
- Warrant 6 Accident Experience
- Warrant 7 Systems
- Warrant 8 Combination of Warrants
- Warrant 9 Four Hour Volumes
- Warrant 10 Peak Hour Delay
- Warrant 11 Peak Hour Volume
- Left Turn Conflict Analysis

This analysis was conducted by:

BILL PUTNAM

(Name)

STRAND ASSOCIATES, INC.

(Agency)

12/22/97

(Date)

Check which conditions apply and record volumes for the highest four hours.
 To determine if warrant 9 and/or 11 is satisfied, plot the highest four hours on the figures below (4 hours minimum, 8 hours recommended).

	Number of Thru Lanes Per Approach		Time			
	One	Two or More				
MAJOR STREET (Both Approaches)						
MINOR STREET (One Approach)						

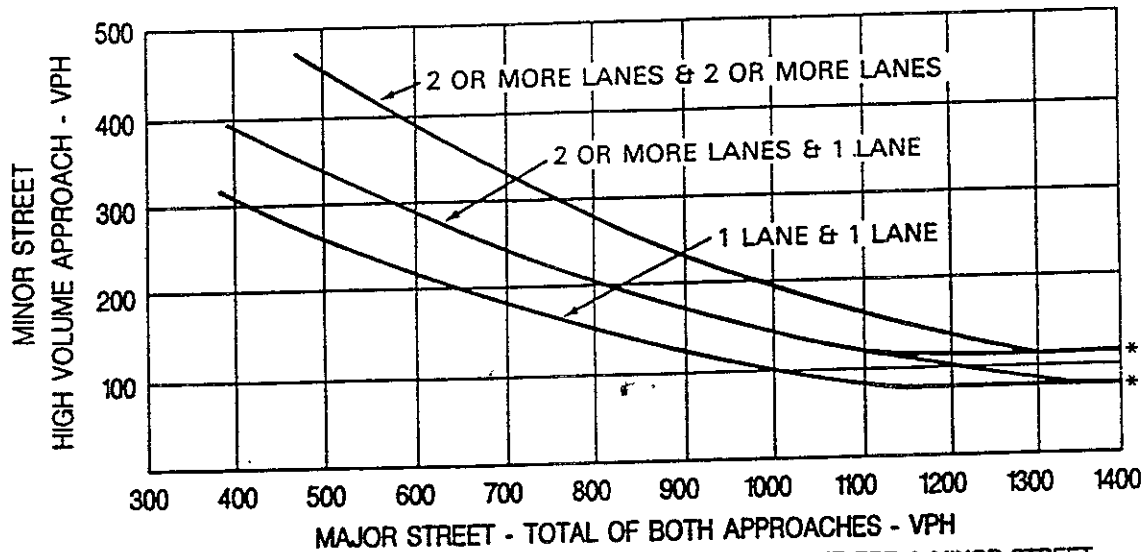
WARRANT SATISFIED

☐ YES ☐ NO

WARRANT 9

FOUR HOUR VOLUME **URBAN**

FIGURE 4-7. FOUR HOUR VOLUME WARRANT



*NOTE: 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

MONONA DRIVE/
 COLDSPRING AVENUE WITH PROJECTED VOLUMES

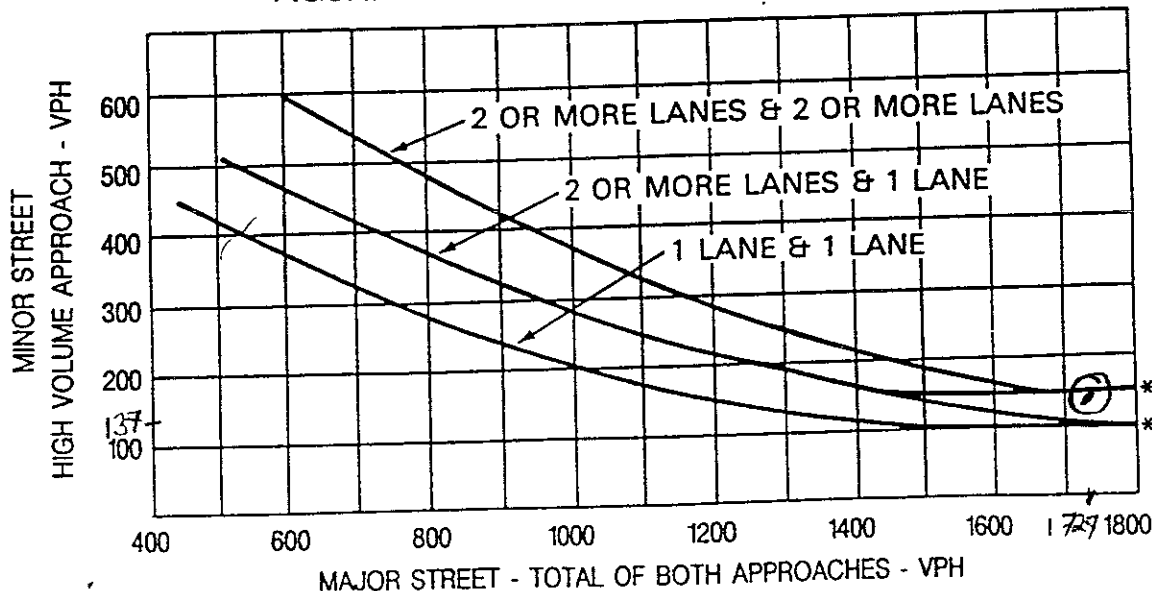
WARRANT 11

PEAK HOUR VOLUME **URBAN**

WARRANT SATISFIED

☒ YES ☐ NO

FIGURE 4-5. PEAK HOUR VOLUME WARRANT



*NOTE: 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Wisconsin Department of Transportation

Traffic Signal Warrant Summary Sheet

The Worksheet(s) attached are provided as an attachment to the Engineering Investigation Study for:

Location: MONONA DRIVE / LOFTY AVENUE

City/Town/Village: MONONA / MADISON

County: DANE

INTERSECTION IS ANALYZED FOR urban/rural WARRANTS. COMMENTS: PROJECTED

VOLUMES ASSUMING REVISED SCHOOL SITE ACCESS AT LOFTY ONLY

The warrants for rural areas (70% of urban warrant) are used when the 85% speed on the major street exceeds 40 m.p.h. or when the intersection lies within the built-up area of an isolated community having a population of less than 10,000.

ANALYSIS IS BASED ON COUNTS CONDUCTED ON PROJECTED VOLUMES & 19, FROM AM TO AM
DAYS DAYS

Warrant Evaluation Summary

Warrants Satisfied

YES	NO	NOT EVALUATED
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Analysis was conducted by:

BILL PUTNAM

(Name)

STRAND ASSOCIATES, INC.

(Agency)

12/22/97

(Date)

Check which conditions apply and record volumes for the highest four hours.

Determine if warrant 9 and/or 11 is satisfied, plot the highest four hours on the figures below (4 hours minimum, 8 hours recommended)

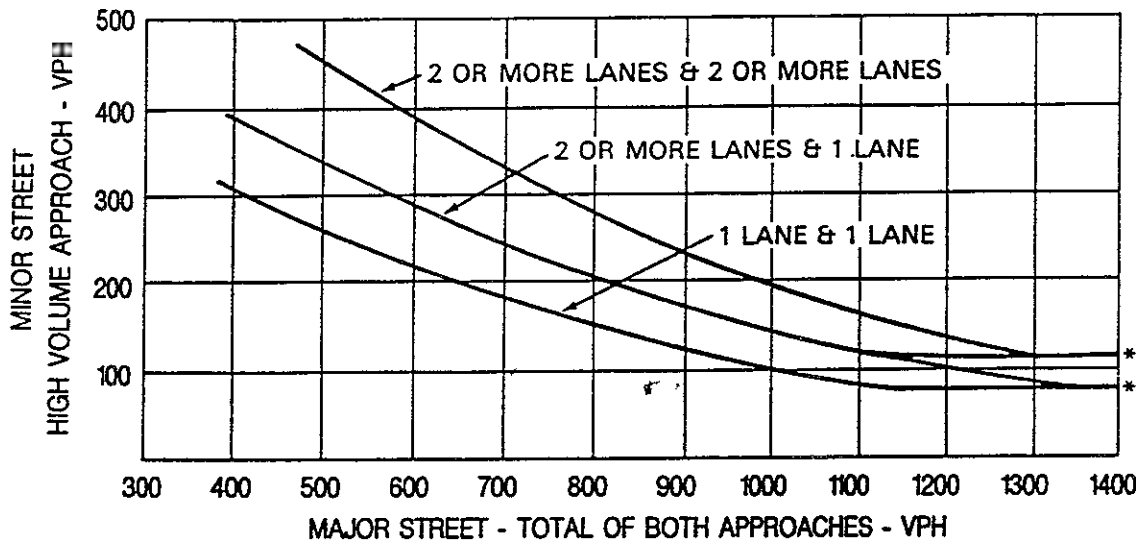
	Number of Thru Lanes Per Approach		Time			
	One	Two or More				
MAJOR STREET (Both Approaches)						
MINOR STREET (One Approach)						

WARRANT 9

FOUR HOUR VOLUME URBAN

☐ YES ☐ NO

FIGURE 4-7. FOUR HOUR VOLUME WARRANT



LOFTY AVENUE /

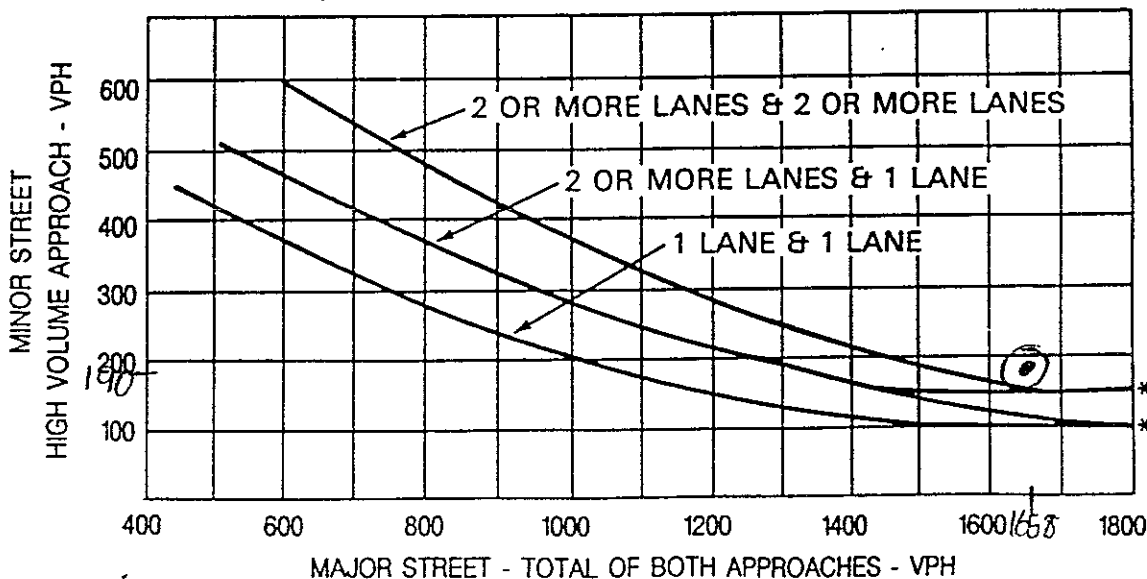
COLDSPRING AVENUE WITH PROJECTED VOLUMES

WARRANT 11

PEAK HOUR VOLUME URBAN

☒ YES ☐ NO

FIGURE 4-5. PEAK HOUR VOLUME WARRANT



File Name MONCOLDP.HCO
Streets: (N-S) Monona Drive
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... whp
Date of Analysis..... 11/26/97
Other Information..... 7-8 am

(E-W) Coldspring Ave.

EXISTING CONDITIONS

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0>	2<	0	0>	2<	0	0>	1<	0	0>	1<	0
Stop/Yield			N			N						
Volumes	2	745	141	47	724	2	2	1	8	62	9	43
PHF	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77
Grade		-4			4			-2			1	
MC's (%)	0	0	0	0	0	0	0	0	0	0	0	0
SU/RV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
CV's (%)	5	5	5	5	5	5	0	0	0	0	0	0
PCE's	.8	.8	.8	1.3	1.3	1.3	1	1	1	1.1	1.1	1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	443	363
Potential Capacity: (pcph)	826	907
Movement Capacity: (pcph)	826	907
Prob. of Queue-free State:	0.92	0.99
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	886	726
Potential Capacity: (pcph)	573	699
Movement Capacity: (pcph)	573	699
Prob. of Queue-free State:	0.86	1.00
TH Saturation Flow Rate: (pcphpl)	3400	3400
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-free State:	0.78	1.00
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph)	1590	1660
Potential Capacity: (pcph)	128	117
Capacity Adjustment Factor due to Impeding Movements	0.78	0.78
Movement Capacity: (pcph)	100	91
Prob. of Queue-free State:	0.87	0.99
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1589	1524
Potential Capacity: (pcph)	102	112
Major LT, Minor TH Impedance Factor:	0.77	0.68
Adjusted Impedance Factor:	0.82	0.75
Capacity Adjustment Factor due to Impeding Movements	0.82	0.69
Movement Capacity: (pcph)	83	78

Intersection Performance Summary AM

Movement	FlowRate v (pcph)	MoveCap Cm (pcph)	SharedCap Csh (pcph)	Avg.Total Delay	LOS	Delay By App
EB L	3	78	>	48.0	>	
EB T	1	91	> 231	40.0	> C	16.6
EB R	10	907	>	4.0	>	
WB L	89	83	>	409.0	>	
WB T	13	100	> 128	41.4	> F	640.3
WB R	62	826	>	4.7	>	
NB L	2	699		5.2	B	0.0
SB L	79	573		7.3	B	0.4

Intersection Delay = 41.2

File Name MONCOLD.HC0
Streets: (N-S) Monona Drive
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... whp
Date of Analysis..... 11/26/97
Other Information..... 4-5 pm

(E-W) Coldspring Ave.

EXISTING CONDITIONS

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0>	2<	0	0>	2<	0	0>	1<	0	0>	1<	0
Stop/Yield			N			N						
Volumes	8	863	48	22	892	4	2	2	12	18	3	7
PHF	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91
Grade		-4			4			-2			1	
MC's (%)	0	0	0	0	0	0	0	0	0	0	0	0
SU/RV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
CV's (%)	5	5	5	5	5	5	0	0	0	0	0	0
PCE's	.82	.82	.82	1.29	1.29	1.29	1	1	1	1.1	1.1	1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	456	448
Potential Capacity: (pcph)	813	821
Movement Capacity: (pcph)	813	821
Prob. of Queue-free State:	0.99	0.98
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	911	896
Potential Capacity: (pcph)	556	566
Movement Capacity: (pcph)	556	566
Prob. of Queue-free State:	0.94	0.99
TH Saturation Flow Rate: (pcphpl)	3400	3400
RT Saturation Flow Rate: (pcphpl)*	1700	1700
Major LT Shared Lane Prob. of Queue-free State:	0.91	0.98
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph)	1813	1835
Potential Capacity: (pcph)	95	92
Capacity Adjustment Factor due to Impeding Movements	0.90	0.90
Movement Capacity: (pcph)	85	82
Prob. of Queue-free State:	0.96	0.98
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1810	1788
Potential Capacity: (pcph)	74	76
Major LT, Minor TH Impedance Factor:	0.87	0.86
Adjusted Impedance Factor:	0.90	0.90
Capacity Adjustment Factor due to Impeding Movements	0.89	0.89
Movement Capacity: (pcph)	66	67

Intersection Performance Summary *PM*

Movement		FlowRate v (pcph)	MoveCap Cm (pcph)	SharedCap Csh (pcph)	Avg.Total Delay		LOS	Delay By App
EB	L	2	67	>	>		>	
EB	T	2	82	>	243	>	15.9	> C 15.9
EB	R	13	821	>	>		>	
WB	L	22	66	>	>		>	
WB	T	3	85	>	90	>	63.8	> F 63.8
WB	R	9	813	>	>		>	
NB	L	7	566		6.4		B	0.1
SB	L	31	556		6.9		B	0.2

Intersection Delay = 1.2

File Name MONLOFAM.HC0
Streets: (N-S) monona drive (E-W) Lofty
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... whp
Date of Analysis..... 12/9/97
Other Information..... School Access at Lofty only monlofam

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0>	2<	0	0>	2<	0	0>	1<	0	0>	1	1
Stop/Yield			N			N						
Volumes	8	745	200	64	724	8	4	1	10	71	1	22
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		0			0			0			0	
MC's (%)	0	0	0	0	0	0	0	0	0	0	0	0
SU/RV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
CV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
PCE's	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	472	366
Potential Capacity: (pcph)	798	903
Movement Capacity: (pcph)	798	903
Prob. of Queue-free State:	0.97	0.99
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	945	732
Potential Capacity: (pcph)	533	694
Movement Capacity: (pcph)	533	694
Prob. of Queue-free State:	0.86	0.99
TH Saturation Flow Rate: (pcphpl)	3400	3400
RT Saturation Flow Rate: (pcphpl) *	1700	1700
Major LT Shared Lane Prob. of Queue-free State:	0.81	0.98
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph)	1649	1745
Potential Capacity: (pcph)	118	104
Capacity Adjustment Factor due to Impeding Movements	0.80	0.80
Movement Capacity: (pcph)	94	83
Prob. of Queue-free State:	0.99	0.99
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1641	1545
Potential Capacity: (pcph)	95	109
Major LT, Minor TH Impedance Factor:	0.79	0.79
Adjusted Impedance Factor:	0.84	0.84
Capacity Adjustment Factor due to Impeding Movements	0.83	0.81
Movement Capacity: (pcph)	78	88

Intersection Performance Summary

Movement		FlowRate v (pcph)	MoveCap Cm (pcph)	SharedCap Csh (pcph)	Avg.Total Delay	LOS	Delay By App
EB	L	4	88	>	>	>	
EB	T	1	83	> 240	> 16.1	> C	16.1
EB	R	12	903	>	>	>	
WB	L	83	78	> 78	> 422.4	> F	
WB	T	1	94	>	>	>	335.7
WB	R	25	798		4.7	A	
NB	L	9	694		5.3	B	0.0
SB	L	74	533		7.8	B	0.6

Intersection Delay = 17.4

File Name MONLOFPM.HCO
 Streets: (N-S) monona drive (E-W) Lofty
 Major Street Direction.... NS
 Length of Time Analyzed... 60 (min)
 Analyst..... whp
 Date of Analysis..... 12/9/97
 Other Information..... School Access at Lofty only monlofpm

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0>	2<	0	0>	2<	0	0>	1<	0	0>	1	1
Stop/Yield			N			N						
Volumes	7	798	74	23	752	4	5	1	6	144	1	45
PHF	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95	.95
Grade		0			0			0			0	
MC's (%)	0	0	0	0	0	0	0	0	0	0	0	0
SU/RV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
CV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
PCE's	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	436	378
Potential Capacity: (pcph)	833	891
Movement Capacity: (pcph)	833	891
Prob. of Queue-free State:	0.94	0.99
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	872	756
Potential Capacity: (pcph)	583	673
Movement Capacity: (pcph)	583	673
Prob. of Queue-free State:	0.96	0.99
TH Saturation Flow Rate: (pcphpl)	3400	3400
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-free State:	0.94	0.98
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph)	1621	1656
Potential Capacity: (pcph)	123	117
Capacity Adjustment Factor due to Impeding Movements	0.92	0.92
Movement Capacity: (pcph)	114	108
Prob. of Queue-free State:	0.99	0.99
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1617	1582
Potential Capacity: (pcph)	98	103
Major LT, Minor TH Impedance Factor:	0.91	0.92
Adjusted Impedance Factor:	0.93	0.94
Capacity Adjustment Factor due to Impeding Movements	0.93	0.88
Movement Capacity: (pcph)	91	90

Intersection Performance Summary

Movement	FlowRate v (pcph)	MoveCap Cm (pcph)	SharedCap Csh (pcph)	Avg.Total Delay	LOS	Delay By App
EB L	6	90	>	>	>	
EB T	1	108	> 167	> 23.5	> D	23.5
EB R	7	891	>	>	>	
WB L	167	91	> 91	> *	> F	
WB T	1	114	>	>	>	*
WB R	52	833		4.6	A	
NB L	8	673		5.4	B	0.0
SB L	26	583		6.5	B	0.2

Intersection Delay = 132.9

* The calculated delay was greater than 999.9 sec.

File Name MONCOA2.HC0
Streets: (N-S) Monona Drive (E-W) Coldspring Ave.
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... whp
Date of Analysis..... 11/26/97
Other Information..... 7-8 am option b or c moncoa2

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0>	2<	0	0>	2<	0	0>	1<	0	0>	1<	0
Stop/Yield			N			N						
Volumes	2	745	191	63	724	2	2	1	8	79	9	49
PHF	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77
Grade		-4			4			-2			1	
MC's (%)	0	0	0	0	0	0	0	0	0	0	0	0
SU/RV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
CV's (%)	5	5	5	5	5	5	0	0	0	0	0	0
PCE's	.8	.8	.8	1.3	1.3	1.3	1	1	1	1.1	1.1	1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	468	363
Potential Capacity: (pcph)	802	907
Movement Capacity: (pcph)	802	907
Prob. of Queue-free State:	0.91	0.99
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	936	726
Potential Capacity: (pcph)	539	699
Movement Capacity: (pcph)	539	699
Prob. of Queue-free State:	0.80	1.00
TH Saturation Flow Rate: (pcphpl)	3400	3400
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-free State:	0.69	1.00
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph)	1632	1726
Potential Capacity: (pcph)	121	107
Capacity Adjustment Factor due to Impeding Movements	0.69	0.69
Movement Capacity: (pcph)	83	73
Prob. of Queue-free State:	0.84	0.99
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1630	1540
Potential Capacity: (pcph)	96	110
Major LT, Minor TH Impedance Factor:	0.68	0.58
Adjusted Impedance Factor:	0.75	0.67
Capacity Adjustment Factor due to Impeding Movements	0.74	0.61
Movement Capacity: (pcph)	71	67

Intersection Performance Summary

Movement		FlowRate v (pcph)	MoveCap Cm (pcph)	SharedCap Csh (pcph)	Avg.Total Delay		LOS	Delay By App
EB	L	3	67	>	>		>	
EB	T	1	73	>	201	>	C	19.3
EB	R	10	907	>	>		>	
WB	L	113	71	>	>		>	
WB	T	13	83	>	107	>	F	*
WB	R	70	802	>	>		>	
NB	L	2	699		5.2		B	0.0
SB	L	107	539		8.3		B	0.7

Intersection Delay = 117.4

* The calculated delay was greater than 999.9 sec.

File Name MONCOP2.HC0
Streets: (N-S) Monona Drive (E-W) Coldspring Ave.
Major Street Direction.... NS
Length of Time Analyzed... 60 (min)
Analyst..... whp
Date of Analysis..... 11/26/97
Other Information..... 4-5 pm option b or c moncop2

Two-way Stop-controlled Intersection

	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
No. Lanes	0>	2<	0	0>	2<	0	0>	1<	0	0>	1<	0
Stop/Yield			N			N						
Volumes	6	798	79	28	752	1	3	2	8	71	2	28
PHF	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91
Grade		-4			4			-2			1	
MC's (%)	0	0	0	0	0	0	0	0	0	0	0	0
SU/RV's (%)	0	0	0	0	0	0	0	0	0	0	0	0
CV's (%)	5	5	5	5	5	5	0	0	0	0	0	0
PCE's	.8	.8	.8	1.3	1.3	1.3	1	1	1	1.1	1.1	1.1

Adjustment Factors

Vehicle Maneuver	Critical Gap (tg)	Follow-up Time (tf)
Left Turn Major Road	5.50	2.10
Right Turn Minor Road	5.50	2.60
Through Traffic Minor Road	6.50	3.30
Left Turn Minor Road	7.00	3.40

WorkSheet for TWSC Intersection

Step 1: RT from Minor Street	WB	EB
Conflicting Flows: (vph)	438	376
Potential Capacity: (pcph)	831	893
Movement Capacity: (pcph)	831	893
Prob. of Queue-free State:	0.96	0.99
Step 2: LT from Major Street	SB	NB
Conflicting Flows: (vph)	877	753
Potential Capacity: (pcph)	580	676
Movement Capacity: (pcph)	580	676
Prob. of Queue-free State:	0.93	0.99
TH Saturation Flow Rate: (pcphpl)	3400	3400
RT Saturation Flow Rate: (pcphpl)	1700	1700
Major LT Shared Lane Prob. of Queue-free State:	0.90	0.99
Step 3: TH from Minor Street	WB	EB
Conflicting Flows: (vph)	1624	1664
Potential Capacity: (pcph)	122	116
Capacity Adjustment Factor due to Impeding Movements	0.89	0.89
Movement Capacity: (pcph)	108	103
Prob. of Queue-free State:	0.98	0.98
Step 4: LT from Minor Street	WB	EB
Conflicting Flows: (vph)	1624	1586
Potential Capacity: (pcph)	97	103
Major LT, Minor TH Impedance Factor:	0.87	0.87
Adjusted Impedance Factor:	0.90	0.90
Capacity Adjustment Factor due to Impeding Movements	0.89	0.87
Movement Capacity: (pcph)	87	89

Intersection Performance Summary

Movement		FlowRate v (pcph)	MoveCap Cm (pcph)	SharedCap Csh (pcph)	Avg.Total Delay	LOS	Delay By App
EB	L	3	89	>	>	>	
EB	T	2	103	> 222	> 17.3	> C	17.3
EB	R	9	893	>	>	>	
WB	L	86	87	>	>	>	
WB	T	2	108	> 116	> 324.4	> F	324.4
WB	R	34	831	>	>	>	
NB	L	6	676		5.4	B	0.0
SB	L	40	580		6.7	B	0.2

Intersection Delay = 18.7

onona Grove High School
 AM peak hour
 onlofam signal at lofty, access lofty only

12/19/97
 15:58:36

SIGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters

ETROAREA	NONCBD
OSTTIME	3.0
LEVELOFSERVICE	C S
MODELOCATION	0 0

Approach Parameters

APPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	BOTH
PARKVOLUMES	0	0	0	2
BUSVOLUMES	0	0	0	0
RIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	8	724	64	22	1	71	200	745	8	10	1	4
WIDTHS	.0	24.0	.0	.0	12.0	.0	.0	24.0	.0	.0	12.0	.0
LANES	0	2	0	0	1	0	0	2	0	0	1	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
PEAKHOURFACTORS	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77
ARRIVALTYPES	3	3	3	3	3	3	2	2	2	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
DEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
STOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	2291	0	0	1465	0	0	3192	0	0	1241	0

Phasing Parameters

SEQUENCES	11	ALL			LEADLAGS	NONE	NONE
PERMISSIVES	NO	NO	NO	NO	OFFSET	.00	1
OVERLAPS	YES	YES	YES	YES	PEDTIME	.0	0
CYCLES	60	90	15				
GREENTIMES	42.04	9.96					
YELLOWTIMES	4.00	4.00					
CRITICALS	2	5					
EXCESS	0						

12/19/97
15:58:44

C= 60 sec G= 52.0 sec = 86.7% Y= 8.0 sec = 13.3% Ped= .0 sec = .0%

Monona Grove High School
 AM peak hour
 monlofam signal at lofty, access lofty only

12/19/97
 15:58:44

SIGNAL94/TEAPAC[V1 L1.4] - HCM Volume Adjustment Worksheet

appr	Mvt		Flow	Lane	Group	No.of	Lane	Adj	Prop.of	
-Mvt	Vol	PHF	Rate	Group	Flow	Lanes	Util	Flow	LT	RT
--	vph	--	vph	--	vph	-	--	vph	--	--
N-RT	8	.77	10	--	0	0	1.00	0	.00	.00
N-TH	724	.77	940	LT+TH+RT	1033	2	1.05	1085	.08	.01
N-LT	64	.77	83	--	0	0	1.00	0	.00	.00
E-RT	22	.77	29	--	0	0	1.00	0	.00	.00
E-TH	1	.77	1	LT+TH+RT	122	1	1.00	122	.75	.24
E-LT	71	.77	92	--	0	0	1.00	0	.00	.00
S-RT	200	.77	260	--	0	0	1.00	0	.00	.00
S-TH	745	.77	968	LT+TH+RT	1238	2	1.05	1300	.01	.21
S-LT	8	.77	10	--	0	0	1.00	0	.00	.00
W-RT	10	.77	13	--	0	0	1.00	0	.00	.00
W-TH	1	.77	1	LT+TH+RT	19	1	1.00	19	.26	.68
W-LT	4	.77	5	--	0	0	1.00	0	.00	.00

SIGNAL94/TEAPAC[V1 L1.4] - HCM Saturation Flow Adjustment Worksheet

ap pr ch --	Lane Group Mvmnts --	Ideal Satfl pcphg	No of Lns -	Adjustment Factors									Adj	
				Lane		Heavy	Bus	Ar	Right	Left	Adj	Sat-		
				Width	Vehs								Grade	Parkg
=====														
N-LT+TH+RT		1900	2	1.000	.980	1.000	1.000	1.000	1.0	.999	.616	1.00	2291	
E-LT+TH+RT		1900	1	1.000	.980	1.000	1.000	1.000	1.0	.868	.906	1.00	1465	
S-LT+TH+RT		1900	2	1.000	.980	1.000	1.000	1.000	1.0	.968	.885	1.00	3192	
W-LT+TH+RT		1900	1	1.000	.980	1.000	.890	1.000	1.0	.808	.927	1.00	1241	

12/19/97
15:58:45

Input/Calculation	Approach			
	N-LT	E-LT	S-LT	W-LT
C - Cycle Length	60.0000	60.0000	60.0000	60.0000
g - Actual Green Time	42.0389	9.9611	42.0389	9.9611
g - Effective Green Time	43.0389	10.9611	43.0389	10.9611
go - Opp. Effective Green Time	43.0389	10.9611	43.0389	10.9611
J - Number of Lanes	2.0000	1.0000	2.0000	1.0000
No - No. of Opp. Lanes (9-17)	2.0000	1.0000	2.0000	1.0000
vLT - Adjusted LT Flow Rate	83.0000	92.0000	10.0000	5.0000
pLT - Proportion of LT	.0803	.7541	.0081	.2632
pLT0 - Prop. of Opp. LT (9-18)	.0081	.2632	.0803	.7541
vo - Adjusted Opp. Flow Rate	1300.0000	19.0000	1085.0000	122.0000
tL - Lost Time	3.0000	3.0000	3.0000	3.0000
LTC - Left Turns per Cycle	1.3833	1.5333	.1667	.0833
Volc - Opp. Flow /Lane /Cycle	10.8333	.3167	9.0417	2.0333
rho - Opposing Platoon Ratio	.6667	1.0000	1.0000	1.0000
gf - First LT Effect. Green	10.8122	.2330	29.9343	5.3187
qro - Opposing Queue Ratio	.5218	.8173	.2827	.8173
jq - Opp. Queue Effect. Green	11.8901	.0000	4.3172	3.8532
ju - Unsaturated Effect. Green	31.1488	10.7281	13.1046	5.6423
fs - LT Satur. Factor (9-17)	.0625	.8631	.1969	.7987
pL - Proportion of LT (9-17)	.6168	.7541	.0572	.2632
1 - Max. Opp. Vehicles (9-18)	.5390	.0000	.0000	.0000
PTHo - Prop. TH in Opp. (9-18)	.9919	.7368	.9197	.2459
EL1 - TH Equivalent for LT	16.0000	1.1402	16.0000	1.6295
EL2 - Opp. TH Equiv. (9-18)	.5400	.0000	.0000	.0000
fmin - Minimum Value for fLT	.0751	.3201	.0491	.2305
fm - LT Factor for LT (9-17)	.3218	.9064	.8594	.9268
fLT - LT Factor for Lane Group	.6159	.9064	.8847	.9268

Ap	Lane	LT	Adj	Adj	Flow	Green	Lane	V/C	Crit
pr	Group	Phase	Flow	Satfl	Ratio	Ratio	Group	Ratio	Lane
ch	Mvts	Type	Rate	Rate	v/s	g/C	Capac	v/c	Grp
--	--	--	vph	vphg	--	--	vph	--	-


Svc Lvl:LOS		B+		B		B+		B		B+
Deg Sat:v/c	.00	.53	.00	.00	.43	.00	.00	.53	.00	.03
vg Del:s/v	.0	8.6	.0	.0	18.0	.0	.0	8.5	.0	14.0
ot Del:min	0	32	0	0	16	0	0	36	0	1
# Stops:veh	0	137	0	0	41	0	0	154	0	2
ax Que:veh	0	13	0	0	5	0	0	14	0	0
max Que: ft	0	160	0	0	119	0	0	181	0	25

PPR TOTALS					Int
Param:Units	N Approach	E Approach	S Approach	W Approach	Total
djVol: vph	898	208	1014	13	2133
Svc Lvl:LOS	B+	B	B+	B	B+
eg Sat:v/c	.53	.43	.53	.03	.51
Avg Del:s/v	8.6	18.0	8.5	14.0	9.5
Tot Del:min	32	16	36	1	85
Stops:veh	137	41	154	2	334
Max Que:veh	13	5	14	0	32
Max Que: ft	160	119	181	25	181

Monona Grove High School
 PM peak hour
 monlofpm lofty pm with access only at lofty

12/19/97
 15:59:54

SIGNAL94/TEAPAC[V1 L1.4] - Evaluation of Intersection Performance

3q 11 **/**	Phase 1	Phase 2
	* * * * * * < * * * > V ^ < + + + > + + + + + +	^ ***** < ***** ***** ^ + + + + + + + + + + + + V
	G/C= .560 G= 33.6" Y+R= 4.0" OFF= .0%	G/C= .306 G= 18.4" Y+R= 4.0" OFF= 62.7%

C= 60 sec G= 52.0 sec = 86.7% Y= 8.0 sec = 13.3% Ped= .0 sec = .0%

MVMT TOTALS	N Approach			E Approach			S Approach			W Approach			Int
Param:Units	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
AdjVol: vph	4	868	26	49	1	158	85	921	8	7	1	5	2133
Wid/Ln:ft/#	0/0	24/2	0/0	0/0	12/1	0/0	0/0	24/2	0/0	0/0	12/1	0/0	
g/C Rqd@C:%	0	33	0	0	18	0	0	32	0	0	3	0	
g/C Used: %	0	58	0	0	32	0	0	58	0	0	32	0	
SV @E: vph	0	1696	0	0	483	0	0	1929	0	0	397	0	4505

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IGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters

ETROAREA	NONCBD
LOSTTIME	3.0
LEVELOFSERVICE	C S
ODELOCATION	0 0

Approach Parameters

PPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
PARKINGSIDES	NONE	NONE	NONE	BOTH
PARKVOLUMES	0	0	0	2
BUSVOLUMES	0	0	0	0
LIGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	2	724	63	49	9	79	191	745	2	8	1	2
WIDTHS	.0	24.0	.0	.0	12.0	.0	.0	24.0	.0	.0	12.0	.0
LANES	0	2	0	0	1	0	0	2	0	0	1	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
PEAKHOURFACTORS	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77	.77
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
INSTOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	2308	0	0	1493	0	0	3372	0	0	1245	0

Phasing Parameters

SEQUENCES	11	ALL			LEADLAGS	NONE	NONE
PERMISSIVES	NO	NO	NO	NO	OFFSET	.00	1
OVERLAPS	YES	YES	YES	YES	PEDTIME	.0	0
CYCLES	60	120	15				
GREENTIMES	39.28	12.72					
YELLOWTIMES	4.00	4.00					
CRITICALS	2	5					
EXCESS	0						

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C= 60 sec G= 52.0 sec = 86.7% Y= 8.0 sec = 13.3% Ped= .0 sec = .0%

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SIGNAL94/TEAPAC[V1 L1.4] - HCM Volume Adjustment Worksheet

Appr	Mvt		Flow	Lane	Group	No.of	Lane	Adj	Prop.of		
-Mvt	Vol	PHF	Rate	Group	Flow	Lanes	Util	Flow	LT	RT	
--	vph	--	vph	--	vph	-	--	vph	--	--	
N-RT	2	.77	3	--	0	0	1.00	0	.00	.00	
N-TH	724	.77	940	LT+TH+RT	1025	2	1.05	1076	.08	.00	
N-LT	63	.77	82	--	0	0	1.00	0	.00	.00	
E-RT	49	.77	64	--	0	0	1.00	0	.00	.00	
E-TH	9	.77	12	LT+TH+RT	179	1	1.00	179	.58	.36	
E-LT	79	.77	103	--	0	0	1.00	0	.00	.00	
S-RT	191	.77	248	--	0	0	1.00	0	.00	.00	
S-TH	745	.77	968	LT+TH+RT	1219	2	1.05	1280	.00	.20	
S-LT	2	.77	3	--	0	0	1.00	0	.00	.00	
W-RT	8	.77	10	--	0	0	1.00	0	.00	.00	
W-TH	1	.77	1	LT+TH+RT	14	1	1.00	14	.21	.71	
W-LT	2	.77	3	--	0	0	1.00	0	.00	.00	

SIGNAL94/TEAPAC[V1 L1.4] - HCM Saturation Flow Adjustment Worksheet

Ap	Lane	No	Adjustment Factors										Adj
or	Group	Ideal	of										
h	Mvmts	Satfl	Lns	Lane	Heavy	Bus	Ar	Right	Left	Adj			Sat-
--	--	pcphg	-	Width	Vehs	Grade	Parkg	Block	Loc	Turn	Turn	Fact	flow
N-LT+TH+RT	1900	2	1.000	.980	1.000	1.000	1.000	1.0	1.000	.620	1.00	2308	
E-LT+TH+RT	1900	1	1.000	.980	1.000	1.000	1.000	1.0	.852	.941	1.00	1493	
S-LT+TH+RT	1900	2	1.000	.980	1.000	1.000	1.000	1.0	.969	.934	1.00	3372	
W-LT+TH+RT	1900	1	1.000	.980	1.000	.890	1.000	1.0	.804	.934	1.00	1245	

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SIGNAL94/TEAPAC[V1 L1.4] - HCM Supplemental LT-Factor Worksheet

Input/Calculation	Approach			
	N-LT	E-LT	S-LT	W-LT
C - Cycle Length	60.0000	60.0000	60.0000	60.0000
G - Actual Green Time	39.2771	12.7229	39.2771	12.7229
g - Effective Green Time	40.2771	13.7229	40.2771	13.7229
go - Opp. Effective Green Time	40.2771	13.7229	40.2771	13.7229
N - Number of Lanes	2.0000	1.0000	2.0000	1.0000
No - No. of Opp. Lanes (9-17)	2.0000	1.0000	2.0000	1.0000
vLT - Adjusted LT Flow Rate	82.0000	103.0000	3.0000	3.0000
PLT - Proportion of LT	.0800	.5754	.0025	.2143
PLTo - Prop. of Opp. LT (9-18)	.0025	.2143	.0800	.5754
vo - Adjusted Opp. Flow Rate	1280.0000	14.0000	1076.0000	179.0000
tL - Lost Time	3.0000	3.0000	3.0000	3.0000
LTC - Left Turns per Cycle	1.3667	1.7167	.0500	.0500
Volc - Opp. Flow /Lane /Cycle	10.6667	.2333	8.9667	2.9833
Rpo - Opposing Platoon Ratio	1.0000	1.0000	1.0000	1.0000
gf - First LT Effect. Green	10.0296	.8010	32.4347	8.1645
gro - Opposing Queue Ratio	.3287	.7713	.3287	.7713
gq - Opp. Queue Effect. Green	7.8816	.0000	5.4080	5.6307
gu - Unsaturated Effect. Green	30.2474	12.9219	7.8424	5.5584
fs - LT Satur. Factor (9-17)	.0750	.8662	.2025	.7631
PL - Proportion of LT (9-17)	.5560	.5754	.0187	.2143
n - Max. Opp. Vehicles (9-18)	.0000	.0000	.0000	.0000
PTHo - Prop. TH in Opp. (9-18)	.9975	.7857	.9200	.4246
EL1 - TH Equivalent for LT	16.0000	1.1165	16.0000	1.9002
EL2 - Opp. TH Equiv. (9-18)	.0000	.0000	.0000	.0000
fmin - Minimum Value for fLT	.0773	.2296	.0506	.1770
fm - LT Factor for LT (9-17)	.3294	.9408	.9573	.9345
fLT - LT Factor for Lane Group	.6197	.9408	.9336	.9345

SIGNAL94/TEAPAC[V1 L1.4] - HCM Capacity Analysis Worksheet

Ap	Lane	LT	Adj	Adj	Flow	Green	Lane	V/C	Crit
----	------	----	-----	-----	------	-------	------	-----	------

Pr ch	Group Mvts	Phase Type	Flow Rate vph	Satfl Rate vphg	Ratio v/s	Ratio g/C	Group Capac vph	Ratio v/c	Lane Grp
N-LT+TH+RT			1076	2308	.466	.671	1549	.695	*
E-LT+TH+RT			179	1493	.120	.229	341	.525	*
S-LT+TH+RT			1280	3372	.380	.671	2264	.565	
W-LT+TH+RT			14	1245	.011	.229	285	.049	
Cycle Length, C 60 sec						Sum(v/s) =		.586	
Lost Time Per Cycle, L 6.0 sec						Xc =		.651	

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SIGNAL94/TEAPAC[V1 L1.4] - HCM Level-of-Service Worksheet

Pr ch	Lane Group Mvts	Vol Ratio v/c	Green Ratio g/C	Unif Delay d1 sec/v	Delay Fact DF	Lane Group Capac vph	Cal Term m	Incr Delay d2 sec/v	Lane Group Delay sec/v	Lan Grp LOS	Appr Delay sec/v	Appr LOS
N-LT+TH+RT		.695	.671	4.6	1.00	1549	16	.96	5.6	B+	5.6	B+
E-LT+TH+RT		.525	.229	15.4	1.00	341	16	1.20	16.6	C+	16.6	C+
S-LT+TH+RT		.565	.671	4.0	1.00	2264	16	.25	4.2	A	4.2	A
W-LT+TH+RT		.049	.229	13.7	1.00	285	16	.00	13.7	B	13.7	B
Cycle= 60"											5.7	B+
Int Total		.614									5.7	B+

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SIGNAL94/TEAPAC[V1 L1.4] - Evaluation of Intersection Performance

sq 11	Phase 1	Phase 2
/		
/ \	* * *	^
	* * *	****
	<* * * >	<****
	v	****
	^	v
North	<+ + + >	++++>
	+ + +	++++
	+ + +	v
	G/C= .655	G/C= .212
	G= 39.3"	G= 12.7"
	Y+R= 4.0"	Y+R= 4.0"
	OFF= .0%	OFF=72.1%

C= 60 sec G= 52.0 sec = 86.7% Y= 8.0 sec = 13.3% Ped= .0 sec = .0%

MVMT TOTALS	N Approach			E Approach			S Approach			W Approach			Int
Param:Units	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====
AdjVol: vph	3	987	86	64	12	103	260	1017	3	10	1	3	2549
Wid/Ln:ft/#	0/0	24/2	0/0	0/0	12/1	0/0	0/0	24/2	0/0	0/0	12/1	0/0	
g/C Rqd@C:%	0	48	0	0	17	0	0	40	0	0	3	0	

r/C Used: %	0	67	0	0	23	0	0	67	0	0	23	0
SV @E: vph	0	1549	0	0	341	0	0	2264	0	0	285	0
4439												
svc Lvl:LOS		B+			C+			A			B	B+
deg Sat:v/c	.00	.69	.00	.00	.52	.00	.00	.56	.00	.00	.05	.00
Avg Del:s/v	.0	7.9	.0	.0	23.6	.0	.0	6.0	.0	.0	18.4	.0
tot Del:min	0	35	0	0	18	0	0	32	0	0	1	0
# Stops:veh	0	166	0	0	39	0	0	170	0	0	3	0
378												
Max Que:veh	0	12	0	0	5	0	0	14	0	0	0	0
Max Que: ft	0	149	0	0	116	0	0	177	0	0	25	0
177												

PPR TOTALS												Int
Param:Units	N Approach	E Approach	S Approach	W Approach	Total							
adjVol: vph	1076	179	1280	14	2549							
svc Lvl:LOS	B+	C+	A	B	B+							
deg Sat:v/c	.69	.52	.56	.05	.61							
avg Del:s/v	7.9	23.6	6.0	18.4	8.1							
tot Del:min	35	18	32	1	86							
# Stops:veh	166	39	170	3	378							
Max Que:veh	12	5	14	0	31							
Max Que: ft	149	116	177	25	177							

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IGNAL94/TEAPAC[V1 L1.4] - Summary of Parameter Values

Intersection Parameters

ETROAREA	NONCBD
LOSTTIME	3.0
LEVELOFSERVICE	C S
MODELOCATION	0 0

Approach Parameters

PPLABELS	N	E	S	W
GRADES	.0	.0	.0	.0
PEDLEVELS	0	0	0	0
ARKINGSIDES	NONE	NONE	NONE	BOTH
ARKVOLUMES	0	0	0	2
BUSVOLUMES	0	0	0	0
IGHTTURNONREDS	0	0	0	0

Movement Parameters

MOVLABELS	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT
VOLUMES	1	752	28	28	2	71	79	798	6	8	2	3
WIDTHS	.0	24.0	.0	.0	12.0	.0	.0	24.0	.0	.0	12.0	.0
LANES	0	2	0	0	1	0	0	2	0	0	1	0
UTILIZATIONS	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
TRUCKPERCENTS	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
PEAKHOURFACTORS	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91	.91
ARRIVALTYPES	3	3	3	3	3	3	3	3	3	3	3	3
ACTUATIONS	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
REQCLEARANCES	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
MINIMUMS	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
IDEALSATFLOWS	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
FACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
DELAYFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
STOPFACTORS	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
GROUPTYPES	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM	NORM
SATURATIONFLOWS	0	2851	0	0	1499	0	0	3359	0	0	1288	0

Phasing Parameters

SEQUENCES	11	ALL				
PERMISSIVES	NO	NO	NO	NO	LEADLAGS	NONE
OVERLAPS	YES	YES	YES	YES	OFFSET	.00
CYCLES	60	90	15		PEDTIME	.0
GREENTIMES	39.44	12.56				
YELLOWTIMES	4.00	4.00				
CRITICALS	2	5				
EXCESS	0					

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SIGNAL94/TEAPAC[V1 L1.4] - HCM Input Worksheet

Intersection # 0 -

Area Location Type: NONCBD

										Key: VOLUMES -- >	
										WIDTHS	
										v LANES	

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SIGNAL94/TEAPAC[V1 L1.4] - HCM Volume Adjustment Worksheet

Appr	Mvt		Flow	Lane	Group	No.of	Lane	Adj	Prop.of		
-Mvt	Vol	PHF	Rate	Group	Flow	Lanes	Util	Flow	LT	RT	
--	vph	--	vph	--	vph	-	--	vph	--	--	
N-RT	1	.91	1	--	0	0	1.00	0	.00	.00	
N-TH	752	.91	826	LT+TH+RT	858	2	1.05	901	.04	.00	
N-LT	28	.91	31	--	0	0	1.00	0	.00	.00	
E-RT	28	.91	31	--	0	0	1.00	0	.00	.00	
E-TH	2	.91	2	LT+TH+RT	111	1	1.00	111	.70	.28	
E-LT	71	.91	78	--	0	0	1.00	0	.00	.00	
S-RT	79	.91	87	--	0	0	1.00	0	.00	.00	
S-TH	798	.91	877	LT+TH+RT	971	2	1.05	1020	.01	.09	
S-LT	6	.91	7	--	0	0	1.00	0	.00	.00	
W-RT	8	.91	9	--	0	0	1.00	0	.00	.00	
W-TH	2	.91	2	LT+TH+RT	14	1	1.00	14	.21	.64	
W-LT	3	.91	3	--	0	0	1.00	0	.00	.00	

SIGNAL94/TEAPAC[V1 L1.4] - HCM Saturation Flow Adjustment Worksheet

Ap	Lane	No	Adjustment Factors										Adj
or	Group	Ideal	of										
h	Mvmts	Satfl	Lns	Lane	Heavy	Bus	Ar	Right	Left	Adj			Sat-
--	--	pcphg	-	Width	Vehs	Grade	Parkg	Block	Loc	Turn	Turn	Fact	flow
N-LT+TH+RT	1900	2	1.000	.980	1.000	1.000	1.000	1.0	1.000	.765	1.00	2851	
E-LT+TH+RT	1900	1	1.000	.980	1.000	1.000	1.000	1.0	.862	.933	1.00	1499	
S-LT+TH+RT	1900	2	1.000	.980	1.000	1.000	1.000	1.0	.987	.914	1.00	3359	
W-LT+TH+RT	1900	1	1.000	.980	1.000	.890	1.000	1.0	.813	.955	1.00	1288	

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SIGNAL94/TEAPAC[V1 L1.4] - HCM Supplemental LT-Factor Worksheet

Input/Calculation	Approach			
	N-LT	E-LT	S-LT	W-LT
- Cycle Length	60.0000	60.0000	60.0000	60.0000
G - Actual Green Time	39.4418	12.5582	39.4418	12.5582
g - Effective Green Time	40.4418	13.5582	40.4418	13.5582
o - Opp. Effective Green Time	40.4418	13.5582	40.4418	13.5582
- Number of Lanes	2.0000	1.0000	2.0000	1.0000
No - No. of Opp. Lanes (9-17)	2.0000	1.0000	2.0000	1.0000
LT - Adjusted LT Flow Rate	31.0000	78.0000	7.0000	3.0000
LT - Proportion of LT	.0361	.7027	.0072	.2143
PLTo - Prop. of Opp. LT (9-18)	.0072	.2143	.0361	.7027
vo - Adjusted Opp. Flow Rate	1020.0000	14.0000	901.0000	111.0000
L - Lost Time	3.0000	3.0000	3.0000	3.0000
LTC - Left Turns per Cycle	.5167	1.3000	.1167	.0500
olc - Opp. Flow /Lane /Cycle	8.5000	.2333	7.5083	1.8500
po - Opposing Platoon Ratio	1.0000	1.0000	1.0000	1.0000
gf - First LT Effect. Green	19.7710	1.5543	29.6493	8.0200
ro - Opposing Queue Ratio	.3260	.7740	.3260	.7740
q - Opp. Queue Effect. Green	4.7323	.0000	3.5290	3.0193
gu - Unsaturated Effect. Green	20.6708	12.0039	10.7925	5.5382
fs - LT Satur. Factor (9-17)	.2375	.8662	.3119	.8056
L - Proportion of LT (9-17)	.1914	.7027	.0443	.2143
n - Max. Opp. Vehicles (9-18)	.0000	.0000	.0000	.0000
PTHo - Prop. TH in Opp. (9-18)	.9928	.7857	.9639	.2973
L1 - TH Equivalent for LT	16.0000	1.1165	11.0500	1.5773
L2 - Opp. TH Equiv. (9-18)	.0000	.0000	.0000	.0000
fmin - Minimum Value for fLT	.0589	.2512	.0516	.1791
f _m - LT Factor for LT (9-17)	.6209	.9330	.9178	.9550
LT - LT Factor for Lane Group	.7655	.9330	.9139	.9550

SIGNAL94/TEAPAC[V1 L1.4] - HCM Capacity Analysis Worksheet

ap	Lane	LT	Adj	Adj	Flow	Green	Lane	V/C	Crit
or	Group	Phase	Flow	Satfl	Ratio	Ratio	Group	Ratio	Lane
ch	Mvts	Type	Rate	Rate	v/s	g/C	Capac	v/c	Grp
--	--	--	vph	vphg	--	--	vph	--	-

Port	Lane Group	Vol Ratio v/c	Green Ratio g/C	Unif Delay d1 sec/v	Delay Fact DF	Lane Group Capac vph	Cal Term m	Incr Delay d2 sec/v	Lane Group Delay sec/v	Lan Grp LOS -	Appr Delay sec/v	Appr LOS -	
N-LT+TH+RT		.469	.674	3.5	1.00	1922	16	.14	3.7	A	3.7	A	
E-LT+TH+RT		.327	.226	14.8	1.00	339	16	.21	15.0	B	15.0	B	
S-LT+TH+RT		.451	.674	3.5	1.00	2264	16	.10	3.6	A	3.6	A	
W-LT+TH+RT		.048	.226	13.8	1.00	291	16	.00	13.8	B	13.8	B	
Cycle= 60"													
Int Total		.449										4.3	A

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 Monocpm2 option b or c

12/19/97
 15:21:55

SIGNAL94/TEAPAC[V1 L1.4] - Evaluation of Intersection Performance

Signal	Phase 1	Phase 2
11		
/		
North	* * * * * * <* * * > V ^ <+ + + > + + + + + +	^ ***** <***** ***** ^ +++++ +++++ +++++ V
	G/C= .657 G= 39.4" Y+R= 4.0" OFF= .0%	G/C= .209 G= 12.6" Y+R= 4.0" OFF= 72.4%

C= 60 sec G= 52.0 sec = 86.7% Y= 8.0 sec = 13.3% Ped= .0 sec = .0%

MVMT TOTALS	N Approach			E Approach			S Approach			W Approach			Int
Param:Units	RT	TH	LT	RT	TH	LT	RT	TH	LT	RT	TH	LT	Total
AdjVol: vph	1	867	33	31	2	78	91	922	7	9	2	3	2046
Wid/Ln:ft/#	0/0	24/2	0/0	0/0	12/1	0/0	0/0	24/2	0/0	0/0	12/1	0/0	
y/C Rqd@C:%	0	34	0	0	11	0	0	33	0	0	3	0	
y/C Used: %	0	67	0	0	23	0	0	67	0	0	23	0	
SV @E: vph	0	1922	0	0	339	0	0	2264	0	0	291	0	4816

Svc Lvl:LOS	A			B			A			B			A	
Deg Sat:v/c	.00	.47	.00	.00	.33	.00	.00	.45	.00	.00	.05	.00	.45	
vg Del:s/v	.0	5.4	.0	.0	21.2	.0	.0	5.1	.0	.0	18.5	.0	6.2	
ot Del:min	0	20	0	0	10	0	0	22	0	0	1	0	53	
# Stops:veh	0	107	0	0	23	0	0	119	0	0	3	0	252	

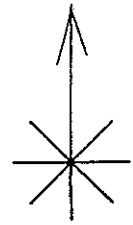
ax Que:veh	0	10	0	0	3	0	0	11	0	0	0	0	24	
Max Que: ft	0	124	0	0	72	0	0	140	0	0	25	0	140	
=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	=====	

PPR TOTALS					Int
Param:Units	N Approach	E Approach	S Approach	W Approach	Total
=====					
AdjVol: vph	901	111	1020	14	2046

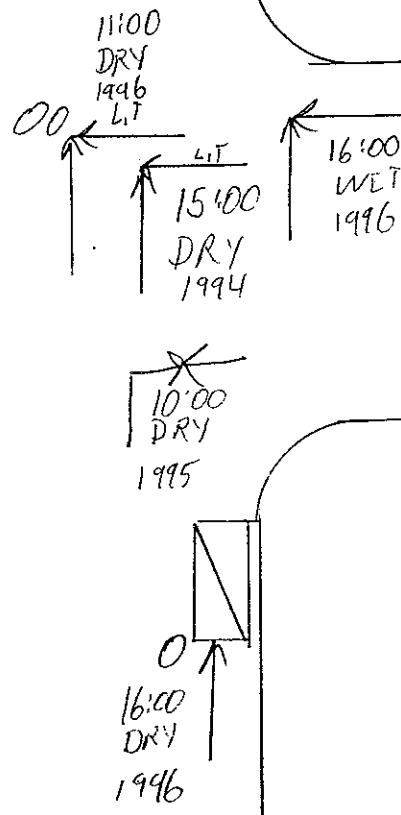
Svc Lvl:LOS	A	B	A	B	A
Deg Sat:v/c	.47	.33	.45	.05	.45
vg Del:s/v	5.4	21.2	5.1	18.5	6.2
Tot Del:min	20	10	22	1	53
" Stops:veh	107	23	119	3	252















Max Que:veh	10	3	11	0	24
Max Que: ft	124	72	140	25	140
=====					

COLLISION DIAGRAM



Indicate North
With Arrow



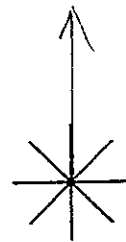
SYMBOL	COLLISION	SYMBOL	COLLISION	SHOW FOR EACH ACCIDENT
	Moving Vehicle		Rear End	1. Date and Time 2. Weather and Road Surface (if unusual condition existed.)
	Backing Vehicle		Head On	
	Pedestrian		Side Swipe	
	Parked Vehicle		Off Road	
	Fixed Object		Left Turn	
	Fatal Accident		Right Angle	
	Injury Accident			
INTERSECTION . MONONA DRIVE and COLDSPRING-				
FROM 1994		TO 1996		
BY J. C. P.		DATE 11/26/97		

COLLISION DIAGRAM

1996
15:00
DRY

1996
15:00
DRY

NO
PED



Indicate North
With Arrow

1995
15:00
DRY

1996
17:00
DRY

SYMBOL	COLLISION	SYMBOL	COLLISION	SHOW FOR EACH ACCIDENT
←	Moving Vehicle	← ←	Rear End	1. Date and Time 2. Weather and Road Surface (if unusual condition existed.)
←→→→	Backing Vehicle	← *	Head On	
←- - -	Pedestrian	← /	Side Swipe	
▢	Parked Vehicle	← o o	Off Road	
□	Fixed Object	→ ↓	Left Turn	
△	Fatal Accident	↖ ↗	Right Angle	
○	Injury Accident			

INTERSECTION MONONA DRIVE and LOFTY

FROM _____ TO _____

BY _____ DATE _____

115	116	117	118	119	120	121	122	123	124	125	126	127
MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D	MONONA D
NON S	INT	INT	INT	INT S	INT	INT	INT	INT N 6400	NON S	INT S	NON S	INT E
6	0	0	0	1	0	0	0	8	1	3	BB	1
NICHOLS	OWEN RD	OWEN RD	OWEN RD	PANTHER	PFLAUM R	PFLAUM R	PFLAUM R	PFLAUM R	S TERESA	TOMPKINS	OWEN RD	
N 11	N 16	N 13	N 17	N 11	N 18	N 15	N 11	N 8	N 15	N 17	N 20	
BLNK	ST WET	BLNK	ST WET	ST DRY	ST DRY	ST DRY	ST WET	ST SNOW	ST DRY	ST WET	ST DRY	
DAY	DAY	DAY	DAY	LIGHT	DAY	DAY	DAY	DAY	DAY	DAY	LIGHT	
INJ 1	PD 0	PD 0	PD 0	PD 0	PD 0	PD 0	PD 0	PD 0	INJ 2	PD 0	INJ 1	
0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	0 M.V.I.T.	
REAR 2	2 S	2 S	2 S	2 S	2 S	2 S	2 S	2 S	2 S	2 S	2 S	
STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	STOPPED	
NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	NONE	
CHG LN	LN	LN	LN	LN	LN	LN	LN	LN	LN	LN	LN	
94462781151	94231310615	94291680982	94372230639	94241430044	94170870646	94352081094	94472871043	94130610060	94442651577	94311860425	94422550637	

AN ACCIDENT HAPPENS ON A STREET(ONSTR) OR HIGHWAY(ONHWY) A GIVEN DISTANCE(INTDIS) AND A GIVEN DIRECTION(INTDIR) FROM A STREET(ATSTR) OR HIGHWAY(ATHWY)

INTDIS= IS IN HUNDRETHS OF A MILE 50= .5 MILE , 5 = .05 MILE

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DRVRDOIN SL/STP=SLOWING OR STOPPING LG PRK= LEGALLY PARKED NO PASSING ZONE OVT LT=OVERTURN LEFT RTOR=RIGHT TURN ON RED

O	O	R	A	I	N	R	L	A	T	M	T	T	D	T	M																
N	H	P	C	N	T	O	G	C	T	C	R	R	F	R	C																
H	W	N	D	N	T	F	T	O	T	M	V	R	V	R	L																
W	Y	N	P	N	T	Y	T	C	O	R	O	L	C	R	N																
D	S	M	L	S	S	H	O	C	T	C	O	R	N	N	N																
I	T	B	I	I	W	L	O	N	I	A	D	I	D	T	M																
R	R	R	S	S	R	G	R	D	J	L	H	R	O	L	B																
39	CTH	BB	M	NON	N	7	NICHOLS	N	11	FT	ST	DRY	DAY	INJ	1	0	M.V.I.T.	HEAD	2	N	GO	STR	NONE	95372070230							
40	CTH	BB	M	INT	0	0	OMEN	RD	N	11	FT	ST	WET	DAY	PD	0	0	M.V.I.T.	ANGL	2	S	GO	STR	NONE	95070331578						
41	CTH	BB	M	INT	0	0	OMEN	RD	N	15	FT	ST	DRY	DAY	INJ	1	0	M.V.I.T.	REAR	2	N	GO	STR	NONE	95120620018						
42	CTH	BB	M	INT	0	0	OMEN	RD	N	19	FT	ST	DRY	LIGHT	PD	0	0	M.V.I.T.	ANGL	2	N	GO	STR	NONE	95170890561						
43	CTH	BB	M	INT	0	0	OMEN	RD	N	14	FT	ST	WET	DAY	PD	0	0	M.V.I.T.	REAR	2	S	STOPED	NONE	95372070306							
44	CTH	BB	M	INT	0	0	OMEN	RD	N	0	HL	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	S	GO	STR	NONE	95372070302						
45	CTH	BB	M	INT	0	0	OMEN	RD	N	9	HL	ST	DRY	DUSK	INJ	1	0	M.V.I.T.	ANGL	2	S	GO	STR	NONE	95493100242						
46	CTH	BB	M	NON	N	0	OMEN	RD	N	0	HL	ST	WET	DAY	PD	0	0	M.V.I.T.	REAR	2	N	GO	STR	NONE	95372070192						
47	CTH	BB	M	NON	N	1	OMEN	RD	N	16	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	S	GO	STR	NONE	95472960729						
48	CTH	BB	M	NON	N	4	PANTHER	N	11	FT	ST	WET	DAY	PD	0	0	M.V.I.T.	ANGL	2	S	GO	STR	NONE	95493100248							
49	CTH	BB	M	INT	0	0	PANTHER	N	15	FT	ST	DRY	DAY	INJ	2	0	M.V.I.T.	ANGL	2	N	GO	STR	NONE	95281601039							
50	CTH	BB	M	NON	N	2	SAINT	TE	N	8	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	N	GO	STR	NONE	95100480416						
51	CTH	BB	M	INT	0	0	SPRING	H	Y	16	HL	ST	DRY	DUSK	INJ	1	0	M.V.I.T.	REAR	2	S	SL/STP	NONE	95533311278							
52	CTH	BB	M	NON	S	1	SPRING	H	N	12	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	REAR	2	N	RT	TRN	NONE	95341910501						
53	CTH	BB	M	NON	S	0	ST	TERES	N	11	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	N	LT	TRN	NONE	95281601029						
54	CTH	BB	M	NON	S	8	ST	TERES	N	16	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	REAR	2	S	SL/STP	NONE	95281601037							
55	CTH	BB	M	INT	0	0	ST	TERES	N	12	FT	ST	DRY	DAY	INJ	2	0	M.V.I.T.	REAR	2	S	STOPED	NONE	95372070320							
56	CTH	BB	M	INT	S	1	TOMPKINS	N	1	FT	ST	SNOW	LIGHT	PD	0	0	M.V.I.T.	REAR	2	N	GO	STR	NONE	95070331554							
57	CTH	BB	M	INT	0	0	TOMPKINS	N	12	FT	ST	BLNK	DAY	INJ	1	0	M.V.I.T.	ANGL	2	W	LT	TRN	STOP	95412540762							
58	CTH	BB	M	INT	0	0	TOMPKINS	N	21	FT	ST	BLNK	LIGHT	PD	0	0	M.V.I.T.	SSS	2	S	GO	STR	NONE	95412540762							
59	CTH	BB	M	INT	0	0	TOMPKINS	N	12	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	W	LT	TRN	STOP	95583521344							
60	CTH	BB	M	INT	0	0	W	BROADW	N	12	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	W	LT	TRN	STOP	95583521344						
61	CTH	BB	M	INT	0	0	W	BROADW	N	7	FT	ST	SNOW	DAWN	PD	0	0	M.V.I.T.	ANGL	2	W	LT	TRN	TRF	SIG	95583521387					
62	CTH	BB	M	INT	0	4	W	BROADW	N	7	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	REAR	3	S	STOPED	TRF	SIG	95281601045						
63	CTH	BB	M	NON	N	4	W	BROADW	N	14	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	REAR	2	S	STOPED	NONE	S	GO	STR	NONE	95372070240			
64	CTH	BB	M	INT	0	0	W	DEAN	N	15	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	E	LT	TRN	TRF	SIG	95412540752					
65	CTH	BB	M	NON	N	10	WINNEQUA	N	18	FT	CU	SNOW	DARK	PD	0	0	BLNK	ANGL	2	S	NEGCRV	NONE	N	GO	STR	NONE	95583521348				
66	CTK	BB	M	NON	S	20	NICHOLS	N	9	FT	ST	SNOW	DAY	PD	0	0	M.V.I.T.	ANGL	2	N	SL/STP	NONE	N	GO	STR	NONE	95070331568				
67	MONOA	DR	INT	0	0	0	DAVIDSON	N	7	HL	ST	DRY	DAY	INJ	2	0	M.V.I.T.	REAR	4	S	STOPED	UNK	N	GO	STR	NONE	95291630743				
68	MONOA	DR	NON	S	0	0	FROST	WO	N	13	HL	ST	DRY	DAY	PD	0	0	M.V.I.T.	ANGL	2	S	GO	STR	NONE	E	LT	TRN	NONE	95211161379		
69	MONOA	DR	INT	S	2	0	OMEN	RD	N	14	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	REAR	2	N	SL/STP	NONE	N	STOPED	NONE	95462832765				
70	MONONA	A	INT	S	2	0	COTTAGE	N	15	FT	ST	DRY	DAY	INJ	1	0	M.V.I.T.	ANGL	2	W	GO	STR	NONE	N	GO	STR	NONE	95382150732			
71	MONONA	A	INT	S	2	0	PLAUM	RD	N	11	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	SSS	2	N	GO	STR	TRF	SIG	N	CHG	LN	TRF	SIG	95231310608
72	012	E	MONONA	D	354G	0.00	INT	0	12	N	7	FT	ST	DRY	DAY	PD	0	0	M.V.I.T.	REAR	2	N	GO	STR	NONE	N	GO	STR	NONE	95070331544	
73	MONONA	D	NON	0	0	0	ACACIA	L	N	15	FT	ST	WET	DAY	INJ	1	0	M.V.I.T.	BLNK	2	E	LT	TRN	NONE	S	GO	STR	NONE	95251420513		
74	MONONA	D	INT	0	0	0	ACACIA	L	N	15	FT	ST	WET	DAY	PD	0	0	M.V.I.T.	ANGL	2	W	LT	TRN	STOP	N	GO	STR	NONE	95281601049		
75	MONONA	D	NON	N	3	0	BROADWAY	N	12	FT	ST	WET	LIGHT	PD	0	0	M.V.I.T.	REAR	2	N	STOPED	NONE	N	GO	STR	NONE	96020101699				
76	MONONA	D	NON	N	4	0	BROADWAY	N	17	FT	ST	SNOW	DAY	PD	0	0	M.V.I.T.	REAR	2	N	CHG	LN	NONE	N	STOPED	NONE	96020101691				

AN ACCIDENT HAPPENS ON A STREET(ONSTR) OR HIGHWAY(ONHWY) A GIVEN DISTANCE(INTDIS) AND A GIVEN DIRECTION(INTDIR)

FROM A STREET(ATSTR) OR HIGHWAY(ATHWY)
INTDIS= IS IN HUNDREDTHS OF A MILE 50= .5 MILE , 5 = .05 MILE

ACCDLOC ACCIDENT LOCATION INT= INTERSECTION, NON= NON-INTERSECTION
NTEYHOUR NOTIIEY HOUR = 01 TO 12 ISAM 12 THRU 24 IS PM(MILITARY TIME)

FIFTY HOUR NOTIFY HOUR = 01 TO 12 IS AM, 12 THRU 24 IS PM (MILITARY TIME)
ACCDTYPE ACCIDENT TYPE M.V.I.T = MOTOR VEHICLE IN TRANSPORT OTHER RDWY = M.V.I.T IN ANOTHER ROADWAY

ACCIDENT TYPE M.V.I. = MOTOR VEHICLE IN TRANSPORT OTHER ROAD
OBJECT NOT FIXED IMPACT ATTN = IMPACT ATTENUATOR

OBJ N | FX = OTHER OBJECT NOT FIXED IMP AT N = IMPACT ATTENUATOR

MNRCOLL MANNER OF COLLISION SSS=SIDE SWIPE SAME, SSO=SIDE SWIPE OPPOSITE NO COLL= NO COLLISION WITH M.V.I.I.
GEOMETRICS FT = FLAT HI = HILL CU = CURVE FT = FLAT SH

GEOMETRICS FI = FLAT HL = HILL CU = CURVE FI = FLAT
DRYDOWN SI / STP = SLOWING OR STOPPING LG PRK = LEGALLY

DRVRDOIN SL/SIP=SLOWING OR STOPPING LG PRK= LEGALLY PARKED NO PASSING ZONE OVT LT=OVERTURN LEFT RTOR=RIGHT TURN ON RED

[illegible]

AN ACCIDENT HAPPENS ON A STREET(ONSTR) OR HIGHWAY(ONHWY) A GIVEN DISTANCE(INTDIS) AND A GIVEN DIRECTION(INTDIR)

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OBJNT EX = OTHER OBJECT NOT FIRED IMRT ATTN = IMPACT ATTENTIONATOR

OBJN1 FX = OTHER OBJECT NOT FIXED IMP| ATIN = IMPACT ATTENUATOR
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1995 ACCIDENTS

115	MONONA D	NON S 0	PELAUM R N 17 FT	ST BLNK DAY	INJ 1 0 M.V.I.T.	ANGL 2 N GO STR NONE	W LT TRN NONE	95251420511
116	MONONA D	NON S 4	PELAUM R N 17 FT	ST WET DAY	PD 0 0 M.V.I.T.	REAR 2 N SL/STP NONE	N STOPED NONE	95251420509
117	MONONA D	INT 0	PLAUM RD N 11 FT	ST DRY DAY	INJ 2 0 M.V.I.T.	ANGL 3 S LT TRN TRF SIG	N GO STR TRF SIG	95241361829
118	MONONA D	NON N 2	SPRING H N 12 FT	ST DRY DAY	PD 0 0 M.V.I.T.	ANGL 2 N LT TRN NONE	S GO STR NONE	95070331576
119	MONONA D	NON N 1	SPRING H N 16 FT	ST DRY DAY	INJ 2 0 M.V.I.T.	REAR 2 N LT TRN NONE	S GO STR NONE	95452780774
120	MONONA D	NON S 1	SPRINGHA N 16 FT	ST DRY DAY	PD 0 0 M.V.I.T.	REAR 4 S STOPED NONE	S STOPED NONE	95211161411
121	MONONA D	INT 0	TOMPKINS N 16 FT	ST DRY DAY	INJ 2 0 M.V.I.T.	ANGL 2 N GO STR NONE	W LT TRN STOP	95472970170
122	MONONA D	INT 0	TOMPKINS N 17 FT	ST WET DAY	PD 0 0 M.V.I.T.	ANGL 2 N GO STR NONE	W GO STR STOP	95221241101
123	MONONA D	INT 0	TOMPKINS N 15 FT	ST DRY DAY	INJ 1 0 M.V.I.T.	ANGL 2 W LT TRN STOP	N GO STR NONE	95281590076
124	MONONA D	INT 0	TOMPKINS N 13 FT	ST DRY DAY	PD 0 0 M.V.I.T.	ANGL 2 N GO STR NONE	S LT TRN NONE	95372070256
125	MONONA D	INT 0	TOMPKINS N 17 FT	ST DRY DAY	PD 0 0 M.V.I.T.	ANGL 2 E LT TRN NONE	N GO STR NONE	95412540568
126	MONONA D	INT 0	TOMPKINS N 7 FT	ST WET DAY	INJ 2 0 M.V.I.T.	ANGL 2 N GO STR NONE	W LT TRN STOP	95573470839
127	MONONA D	NON N 0	TOMPKINS N 21 BLNK	ST DRY LIGHT	PD 0 0 M.V.I.T.	SSS 2 N GO STR NONE	N RT TRN NONE	95291630676
128	MONONA D	INT N 2 BW W BROADW N 9 FT	ST WET DAY	PD 0 0 M.V.I.T.	REAR 2 S SL/STP TRF SIG	S STOPED TRF SIG	S STOPED TRF SIG	95251420521
129	MONONA D	NON N 3 BW W BROADW N 6 FT	ST WET DAY	PD 0 0 M.V.I.T.	REAR 2 S STOPED TRF SIG	S SL/STP TRF SIG	S SL/STP TRF SIG	95251420489

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GEOMETRICS FT = FLAT HL = HILL CU = CURVE FT = FLAT SH

DRVRDOIN SL/STP=SLOWING OR STOPPING LG PRK= LEGALLY PARKED NO PASSING ZONE OVT LT=OVERTURN LEFT RTOR=RIGHT TURN ON RED

O	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A	N	R	A
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AN ACCIDENT HAPPENS ON A STREET(ONSTR) OR HIGHWAY(ONHWY) A GIVEN DISTANCE(INTDIS) AND A GIVEN DIRECTION(INTDIR)

FROM A STREET(ATSTR) OR HIGHWAY(ATHWY)

INTDIS= IS IN HUNDRETHS OF A MILE 50= .5 MILE, 5 = .05 MILE

ACCLOC ACCIDENT LOCATION INT= INTERSECTION, NON= NON-INTERSECTION

NTFYHOUR NOTIFY HOUR = 01 TO 12 IS AM, 12 THRU 24 IS PM(CMILITARY TIME)

ACCDTYPE ACCIDENT TYPE M.V.I.T = MOTOR VEHICLE IN TRANSPORT OTHER RDWY = M.V.I.T IN ANOTHER ROADWY

OBJ NT FX = OTHER OBJECT NOT FIXED IMPAT ATTN = IMPACT ATTENUATOR

MNRCOLL MANNER OF COLLISION SSS=SIDE SWIPE SAME,SSO=SIDE SWIPE OPPOSITE NO COLL= NO COLLISION WITH M.V.I.T

GEOMETRICS FT = FLAT HL = HILL CU = CURVE FT = FLAT

DRVRDOIN SL/STP=SLOWING OR STOPPING LG PRK= LEGALLY PARKED NO PASSING ZONE OVT LT=OVERTURN LEFT RTOR=RIGHT TURN ON RED

1996 ACCIDENTS

	O	R	A	I	N	A	L	F	C	T	C	A	M	T	D	T	T	S	T	M
ONH																				
OHWO																				
QHWYNS																				
HWDSS																				
BURIT																				
SYPRR																				
MONONA D	.	NON N	0	TOPKINS	N	16 FT	ST	DRY	DAY	INJ	10 M.V.I.T.	REAR	2 N BLNK	NONE	N	GO STR	NONE	96261771697		
MONONA D	.	NON N	2	TOPKINS	N	8 BLNK	ST	WET	DAY	INJ	10 M.V.I.T.	REAR	3 N RT TRN	NONE	W	SL/STR	NONE	96402921813		
MONONA D	.	INT	0	W BROADW	N	17 FT	ST	DRY	DAY	PD	0 M.V.I.T.	HEAD	2 W LT TRN	SIG	S	GO STR	TRF	SIG	96413020468	
MONONA D	.	INT N	1	WINNEQUA	Y	22 FT	CJ	WET	LIGHT	INJ	20 OT FIX OBJ	NO COL	1 N OTHER	NONE	N	OTHER	NONE	96110580280		
MONONA D	.	NON S	2992	WINNEQUA	N	12 FT	ST	DRY	DAY	PD	0 M.V.I.T.	SSS	2 N LT TRN	NONE	W	GO STR	NONE	96362670521		
MONONA D	.	NON	0	OLBRICH	N	16 FT	ST	DRY	DAY	PD	0 M.V.I.T.	ANGL	2 N OVT LT	NONE	N	LT TRN	NONE	96160950156		

AN ACCIDENT HAPPENS ON A STREET(ONSTR) OR HIGHWAY(ONHWY) A GIVEN DISTANCE(INTDIS) AND A GIVEN DIRECTION(INTDIR) FROM A STREET(ATSTR) OR HIGHWAY(ATHWY)
INTDIS= IS IN HUNDRETHS OF A MILE 50=.5 MILE, 5 = .05 MILE
ACDLOC ACCIDENT LOCATION INT= INTERSECTION, NON= NON-INTERSECTION
NTEYHOUR NOTIFY HOUR = 01 TO 12 IS AM, 12 THRU 24 IS PM(MILITARY TIME)
ACCTTYPE ACCIDENT TYPE M.V.I.T = MOTOR VEHICLE IN TRANSPORT OTHER ROWY = M.V.I.T IN ANOTHER ROADWAY
OBJ NT FX = OTHER OBJECT NOT FIXED IMPT ATTN = IMPACT ATTENUATOR
MNRCOLL MANNER OF COLLISION SSS=SIDE SWIPE SAME, SSO=SIDE SWIPE OPPOSITE NO COLL= NO COLLISION WITH M.V.I.T
GEOMETRICS FT = FLAT HL = HILL CU = CURVE FT = FLAT SH
DYRDYDNO SL/STP=SLOWING OR STOPPING LG PRK= LEGALLY PARKED NO PASSING ZONE QVT LT=OVERTURN LEFT RTOR=RIGHT TURN

O	R	A	I	A	A	N	R	R	R	A	L	A	A	T	C	A	M	T	T	T	T	T	M														
ON	PH	C	I	A	A	A	A	A	A	A	G	C	C	T	O	T	N	R	R	R	R	R	C														
OH	W	D	N	T	T	F	H	V	D	A	C	C	C	D	T	O	C	C	C	C	C	C	L														
WY	S	N	T	T	T	H	O	E	H	O	O	O	O	S	I	A	O	D	R	R	R	N	M														
B	R	I	I	W	S	R	G	R	R	D	D	D	D	R	J	L	L	H	1	1	1	1	B														
S	P	C	R	S	R																	R															
39	CTY HWY	INT	N	1	FROSTWOO	N	8	FT	ST	DRY	DAY	PD	0	0	0	DEER	NO COL	1	?	GO STR	TRF	SIG	97221570936														
40	MONONA	NON	N	10	COTTAGE	N	13	BLNK	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	REAR	2	N	STOPED	NONE	N	GO STR	NONE	97211470719												
41	MONONA	NON	0			N	15	HL	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	REAR	3	N	STOPED	NONE	N	SL/STP	NONE	97110700076												
42	MONONA	INT	0		ACACIA	L	N	16	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	ANGL	2	W	LT	TRN	STOP	N	GO STR	NONE	97211480187										
43	MONONA	NON	N	3	ACACIA	L	N	17	FT	ST	DRY	DAY	INJ	1	0	0	M.V.I.T.	ANGL	2	W	GO	STR	NONE	N	GO STR	NONE	97231630040										
44	MONONA	NON	N	2	BROADWAY	N	16	FT	ST	WET	DAY	INJ	2	0	0	M.V.I.T.	REAR	3	N	SL/STP	NONE	N	SL/STP	NONE	N	GO STR	NONE	97292090540									
45	MONONA	INT	0		BUCKEYE	N	9	FT	ST	DRY	DAY	INJ	1	0	0	M.V.I.T.	ANGL	2	N	GO	STR	TRF	SIG	S	LT	TRN	TRF	SIG	97221530583								
46	MONONA	NON	S	0	BUCKEYE	N	10	HL	ST	DRY	DAY	INJ	1	0	0	M.V.I.T.	REAR	2	S	GO	STR	NONE	S	STOPED	NONE	N	GO STR	NONE	97327990701								
47	MONONA	NON	S	7	BUCKEYE	N	16	FT	ST	DRY	DAY	INJ	1	0	0	M.V.I.T.	REAR	2	S	GO	STR	NONE	N	SL/STP	NONE	N	GO STR	NONE	97312230709								
48	MONONA	NON	S	20	BUCKEYE	N	15	FT	ST	SNOW	DAY	PD	0	0	0	M.V.I.T.	ANGL	2	N	LT	TRN	NONE	N	GO STR	NONE	N	GO STR	NONE	97070381025								
49	MONONA	INT	0		COTTAGE	Y	22	FT	ST	DRY	LIGHT	INJ	1	0	0	BIKE	NO COL	1	S	LT	TRN	TRF	SIG	N	GO STR	TRF	SIG	N	GO STR	TRF	SIG	97312300177					
50	MONONA	NON	1		COTTAGE	N	22	BLNK	ST	DRY	LIGHT	INJ	1	0	0	M.V.I.T.	HEAD	2	N	GO	STR	TRF	SIG	S	LT	TRN	TRF	SIG	N	GO STR	TRF	SIG	9732720213				
51	MONONA	NON	N	1	COTTAGE	N	16	BLNK	ST	DRY	DAY	INJ	2	0	0	M.V.I.T.	REAR	4	N	STOPED	NONE	N	STOPED	NONE	N	STOPED	NONE	N	STOPED	NONE	N	STOPED	NONE	97302200639			
52	MONONA	NON	N	2	BB	COTTAGE	N	16	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	SSS	2	S	GO	STR	NONE	S	CHG	LN	NONE	S	SL/STP	NONE	N	GO STR	NONE	97322312201			
53	MONONA	NON	N	25	COTTAGE	N	15	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	REAR	2	S	GO	STR	NONE	S	SL/STP	NONE	S	SL/STP	NONE	N	GO STR	NONE	N	GO STR	NONE	97329209052		
54	MONONA	NON	S	2	BB	COTTAGE	N	18	FT	ST	DRY	DUSK	PD	0	0	0	M.V.I.T.	REAR	3	S	STOPED	NONE	N	SL/STP	NONE	N	GO STR	NONE	N	GO STR	NONE	N	GO STR	NONE	97327990691		
55	MONONA	INT	0		COTTAGE	N	23	BLNK	BLNK	BLNK	LIGHT	INJ	2	0	0	M.V.I.T.	REAR	2	N	STOPED	TRF	SIG	N	GO STR	UNK	92302190008											
56	MONONA	INT	N	1	DAVIDSON	N	11	FT	ST	DRY	DAY	INJ	2	0	0	M.V.I.T.	REAR	3	N	STOPED	TRF	SIG	N	STOPED	TRF	SIG	97181200557										
57	MONONA	INT	0		DEAN AVE	N	8	FT	ST	DRY	DAY	INJ	3	0	0	M.V.I.T.	ANGL	2	W	GO	STR	TRF	SIG	N	STOPED	TRF	SIG	97181140120									
58	MONONA	NON	0		DEAN AVE	N	13	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	ANGL	2	W	GO	STR	TRF	SIG	N	GO STR	TRF	SIG	97327990697									
59	MONONA	NON	N	6	DEAN AVE	N	11	FT	ST	SNOW	DAY	PD	0	0	0	M.V.I.T.	ANGL	2	W	LT	TRN	NONE	S	GO STR	NONE	S	GO STR	NONE	S	GO STR	NONE	S	GO STR	NONE	97050270854		
60	MONONA	INT	S	1	E DEAN A	N	13	FT	ST	DRY	DAY	INJ	1	0	0	M.V.I.T.	REAR	2	N	STOPED	TRF	SIG	N	GO STR	TRF	SIG	97261810821										
61	MONONA	INT	0		FEMRITE	N	20	FT	ST	WET	DUSK	PD	0	0	0	M.V.I.T.	REAR	2	S	SL/STP	NONE	S	STOPED	NONE	S	STOPED	NONE	97231630044									
62	MONONA	NON	N	4	FROSTWOO	N	16	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	ANGL	2	E	LT	TRN	NONE	S	GO STR	NONE	S	GO STR	NONE	97232312191								
63	MONONA	INT	0		KINGS RO	Y	16	HL	ST	WET	DAY	INJ	1	0	0	M.V.I.T.	ANGL	3	E	LT	TRN	STOP	S	CHG	LN	NONE	S	CHG	LN	NONE	S	CHG	LN	NONE	97292090536		
64	MONONA	NON	N	2	KINGS RO	N	11	HL	ST	DRY	DAY	INJ	2	0	0	M.V.I.T.	REAR	2	N	STOPED	NONE	N	GO STR	NONE	S	GO STR	NONE	97191210070									
65	MONONA	INT	0		LAKE EDG	N	9	FT	CU	SNOW	DAY	PD	0	0	0	M.V.I.T.	REAR	2	N	GO	STR	TRF	SIG	N	GO STR	TRF	SIG	97060350443									
66	MONONA	NON	E	0	MONONA D	N	15	FT	ST	WET	DAY	PD	0	0	0	M.V.I.T.	NO COL	2	N	GO	STR	NONE	E	CHG	LN	NONE	97312300186										
67	MONONA	NON	N	1	NICHOLS	N	16	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	ANGL	2	N	GO	STR	NONE	E	LT	TRN	NONE	97191210068										
68	MONONA	INT	0		OWEN RD	N	16	FT	ST	DRY	DAY	INJ	1	0	0	M.V.I.T.	ANGL	2	E	BLNK	STOP	S	BLNK	NONE	S	BLNK	NONE	97120771721									
69	MONONA	INT	0		OWEN RD	Y	15	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	REAR	2	S	GO	STR	NONE	S	RT	TRN	NONE	97120771719										
70	MONONA	INT	0		OWEN RD	N	16	FT	ST	WET	DAY	PD	0	0	0	M.V.I.T.	HEAD	2	S	LT	TRN	NONE	N	GO STR	NONE	N	GO STR	NONE	97312230703								
71	MONONA	INT	0		OWEN RD	N	15	FT	ST	DRY	DAY	INJ	1	0	0	M.V.I.T.	ANGL	2	S	RT	TRN	STOP	S	GO STR	NONE	S	GO STR	NONE	97362660896								
72	MONONA	NON	N	2	OWEN RD	N	16	FT	ST	DRY	DAY	PD	0	0	0	M.V.I.T.	ANGL	2	N	GO	STR	NONE	E	LT	TRN	NONE	97040170474										
73	MONONA	NON	N	2	OWEN RD	N	16	FT	ST	WET	DAY	INJ	2	0	0	M.V.I.T.	REAR	2	N	GO	STR	NONE	N	STOPED	NONE	N	STOPED	NONE	97110650150								
74	MONONA	NON	N	5	OWEN RD	N	10	FT	ST	DRY	DAY	INJ	2	0	0	M.V.I.T.	REAR	2	N	LT	TRN	NONE	N	GO STR	NONE	N	GO STR	NONE	97327290695								
75	MONONA	NON	S	0	OWEN RD	N	19	FT	ST	WET	DAY	INJ	1	0	0	M.V.I.T.	REAR	2	N	LT	TRN	NONE	N	GO STR	NONE	N	GO STR	NONE	97312230707								
76	MONONA	INT	0		PANTHER	N	16	FT	ST	SNOW	DAY	PD	0	0	0	M.V.I.T.	REAR	2	N	STOPED	NONE	N	GO STR	NONE	N	GO STR	NONE	97171110621									

AN ACCIDENT HAPPENS ON A STREET(ONSTR) OR HIGHWAY(ONHNY) A GIVEN DISTANCE(INTDIS) AND A GIVEN DIRECTION(INTDIR)

FROM A STREET(ATSTR) OR HIGHWAY(ATHWY)

INTDIS= IS IN HUNDREDTHS OF A MILE 50= .5 MILE , 5 = .05 MILE

ACCDLOC ACCIDENT LOCATION INT= INTERSECTION. NON= NON-INTERSECTION

NTFYHOUR NOTIFY HOUR = 01 TO 12 IS AM.12 THRU 24 IS PM(MILITARY TIME)

ACCDTYPE ACCIDENT TYPE M.V.I.T = MOTOR VEHICLE IN TRANSPORT OTHER RDWY = M.V.I.T IN ANOTHER ROADWAY

OBJ NT FX = OTHER OBJECT NOT FIXED IMPT ATTN = IMPACT ATTENUATOR

MNRCOLL MANNER OF COLLISION SSS=SIDE SWIPE SAME SSO=

MINORCOLL MANNER OF COLLISION 333-SIDE SWIPE SAME, 330-SIDE SWIPE OPPOSITE NO COLL- NO COLLISION WITH M.V.1.1
GEOMETRICS FT = FLAT HL = HILL CU = CURVE FT = FLAT SH

1997 ACCIDENTS

[illegible]

AN ACCIDENT HAPPENS ON A STREET(ONSTR) OR HIGHWAY(ONHWY) A GIVEN DISTANCE(INTDIS) AND A GIVEN DIRECTION(INTDIR)
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MMNRCOLL MANNER OF COLLISION SSS=SIDE SWIPE SAME, SSS=SIDE SWIPE OPPOSITE NO COLL= NO COLLISION WITH M.V.I.T
GEOMETRICS FT = FLAT HL = HILL CU = CURVE FT = FLAT SH
DVRDRAIN SL/STP=SLOWING OR STOPPING LG PRK= LEGALLY PARKED NO PASSING ZONE OVT LI=OVERTURN LEFT RTOR=RIGHT TURN